

THE PRIVATE PROVISION OF PUBLIC GOODS:
THREE ESSAYS ON THE EVOLVING PUBLIC ECONOMICS OF PHILANTHROPY

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ABSTRACT

Alexandra Graddy-Reed: The Private Provision of Public Goods: Three essays on the evolving public economics of philanthropy
(Under the direction of Maryann P. Feldman)

This dissertation contributes to the literature on the private provision of public goods through three papers. The first paper is focused on the organizational level of providing public goods. The paper collects survey data on North Carolina for-profit and nonprofit organizations and empirically demonstrates variation in organizational practices not captured by legal designation. This paper then addresses how private provision of public goods changes in response to economic recession and how responses vary by organizational type and strategy. The second paper addresses the issue of classification of nonprofit entities to consider the role of strategic giving. A classification model based on source of funding and grantmaking strategy is put forth and vetted using a dataset constructed from IRS Form 990s over a five year time period. The paper analyzes differences in giving trends by this classification system during and post-recession and shows how grant size and total giving are impacted by both an organization's funding source and their grantmaking strategy. The third paper expands the nonprofit theoretical base by creating an innovation production model to assess the role of competition in nonprofit organizations focused on disease treatment and eradication. An empirical estimation of the model with multiple innovative outcomes highlights the importance of market share and labor quality to innovation-related investments. Together, these papers add to the theoretical and empirical understanding of how the private provision of public goods changes in response to economic and market conditions and how responses vary by organizational characteristics and strategies.

To my Mother & Jonathan

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CHAPTER ONE: THE PRIVATE PROVISION OF PUBLIC GOODS

1.1 Introduction

Nonprofit organizations support the United States (US) economy as direct providers of public goods, and as employers and revenue generators. They account for a growing share of the economy (5.5% of GDP in 2010) and provide almost 10% of wages for the American workforce (National Center for Charitable Statistics, 2013b). Philanthropy's existence in the US has been constant throughout its history and encouraged by the cultural norm to give back and by the tax code that rewards it.

However, our understanding of these organizations as public good providers is limited – we lack information about what types of organizations are involved in philanthropy and what they contribute to the public good. A varied set of terms is used to describe philanthropy, which can confuse the discussion and empirical analysis. Generally referred to as the third sector to distinguish it from the for-profit and public spheres, it contains nonprofit organizations, which include philanthropic foundations and charitable organizations that aim to provide for the common good. But confusion is growing over terminology as many nonprofit organizations incorporate revenue-generating streams, resembling those in the for-profit world. Additionally, research in this field is constrained by the available data on these organizations and their practices.

This dissertation addresses these deficiencies and confusion in three papers on the private provision of public goods. The three papers apply different methods and data to examine the current strategies of philanthropy in the US. This dissertation contributes to the literature by

developing the theory around organizational philanthropic practices and by using three datasets to analyze their behavior that crosses over traditionally accepted boundaries.

1.2 The Provision of Public Goods

As Federal and state governments continue to debate the extent of their role in the provision of public goods and the regulation of other public good providers, it becomes especially relevant to understand how private individuals and organizations are changing to provide public goods and services. It is well accepted that public goods exist because they are goods that cannot be optimally provided for in the market due to their inherent nature as non-excludable and non-rivalrous. This market failure puts the onus on government to provide pure public goods like ensuring air quality, providing defense, and maintaining infrastructure, due to its size and capital.

However, in the US, a sector of nonprofit organizations, the third sector, exists to also provide quasi-public goods, acting as private providers of public goods. These quasi-public goods¹ differ from pure public goods in that they could be excludable. They include social services like education and job training, food and nutrition, and health care – items benefiting the individual directly receiving them and the community in which these individuals live through positive externalities. These public goods usually affect a smaller scale of individuals or community and often provide a private benefit in addition to the public good. Nonprofits serve as private providers of public goods since government will only provide public goods up to the desire of the median voter, leaving residual demand (Weisbrod, 1975). The US supports their efforts with two key financial incentives: nonprofit organizations themselves are exempt from many taxes paid by for-profit organizations, and individuals receive tax deductions for supporting nonprofit organizations.

¹ Also known as mixed or partial public goods

Through these incentive structures, the Federal government indirectly supports nonprofits as public good providers.

In addition to the third sector, many for-profit organizations provide public goods, though to a lesser extent and in a different form than their nonprofit counterparts. Firms can offer benefits to their employees that improve their quality of life, support programs that benefit their surrounding community, or engage in positive environmental action. These activities can occur within the profit-driven mission of the firm or as an additional act of corporate social responsibility. These actions may be profit-maximizing in the long run and certainly affect communities and the quality of community life.

Individuals can also be private providers of public goods through philanthropy. Large and small donations from individuals to existing nonprofits, through their firm, or by creating a philanthropic foundation can lead to the provision of public goods. These different sources of philanthropy are well documented throughout the literature. The foundation of this work provides an understanding of the motivations behind individual philanthropy (Andreoni, 1990; Atkinson & Stern, 1974; Diamond, 1973; King, 1986). This is complemented by a line of research on the crowding in and out of government and private provision of public goods both through donations to nonprofit organizations (Andreoni & Payne, 2003, 2011; Bergstrom, Blume, & Varian, 1986; Bernheim, 1986), and to the funding of innovative activity (Blume-Kohout, Kumar, & Sood, 2009; Connolly, 1997; David, Hall, & Toole, 2000; Goldfarb, 2008).

The role of philanthropic foundations in the US overtime has been well documented (Fleishman, 2007; Hall, 2006; Salamon, 2002) with recent attention to the growth of more aggressive and business-like approaches to giving (deCourcy Hero, 2001; Feldman & Graddy-Reed, 2014; Frumkin, 2003; Letts, Ryan, & Grossman, 1997). Further, the development of similar practices across legal structure has also been researched, presenting the growth of hybrid organizations and

entrepreneurs with a strong social drive (Dacin, Dacin, & Tracey, 2011; Dart, 2004; Dees, 2008; Mulgan, 2006; Young & Salamon, 2002).

But it is not well known how these evolutions in organizational approach have affected the private provision of public goods. This dissertation contributes to the literature by documenting the changing organizational forms of philanthropy across legal structures, developing the theory of these organizations so that they may be more accurately classified by their behavior, and evaluating their provision of public goods using unique datasets. This chapter follows with a discussion of the theoretical foundations of this dissertation, methodological challenges and paths, and chapter summaries.

1.3 Theoretical Foundations

Public economics extends the foundations of microeconomic theory as related to market failures and considers the transaction costs of the government provision of public goods (Auerbach & Hines, 2002). It allows for the examination of issues related to individual decision-making, organizational behavior, and the effectiveness of tax policy at increasing a community's welfare relative to the tax burden. Public economics serves as the theoretical foundation for this dissertation, with a focus on the theory of public good provision.

The potential crowding out of private giving from public funding is an important and popular question in the literature on the provision of many types of public goods. With respect to dollars to donations, some studies have shown that there is crowding out of private giving from government grants to charities as a result of decreased fundraising efforts after receiving the grant (Andreoni & Payne, 2003, 2011). Earlier work focuses on the distribution of givers and non-givers in the effort of efficiently providing for nonprofits. A transfer of wealth from non-givers to givers will increase donations, but a redistribution from givers to non-givers will not necessarily decrease

donations, as some non-givers may become givers with the additional income (Bergstrom et al., 1986). Bernheim (1986) extends this work to examine if individuals give toward a desired aggregate level, and argues that this does not hold if people enjoy giving – if they receive a personal benefit from donating (Bernheim, 1986). This points to the role of alternate motivations to giving that include public and private benefits. Andreoni's (1990) impure altruistic model accounts for these motivations and concludes that a redistribution to more altruistic people will increase the total provision of giving, supporting the work of Bergstrom (1986), and that crowding out will be incomplete (Andreoni, 1990). Payne (1998) extends Andreoni's framework by including firms producing the charitable good and individual's acting through voting and donating. When controlling for firm heterogeneity and political and economic factors, Payne (1998) confirms incomplete crowd-out (Payne, 1998).

This theoretical base is extended to include the theories of institutional change and organizational behavior. These theories provide the ability to frame and evaluate individual, organizational, and institutional level changes overtime. Olson's (1965) theory of collective action argues that unless the group is small in number, or there are individual incentives or coercion to make individuals act in larger groups, rational self-interested individuals will not act in the interest of the common good. This idea of the role of individual incentives and coercion is argued here to be the shape of social norms and pressure and can lead to the private provision of public goods discussed previously. The role of institutional norms is key to the extent of American philanthropy as they bound individuals to a culture that can change only incrementally (North, 1990; Ostrom, 2009). Philanthropists have prospered in motivating social change by working as elites within these confines and set roles (Bartley, 2007).

As a field, social innovation lacks a conclusive theoretical framework but has been framed as an extension in the theories of entrepreneurship and innovation (Brozek, 2009; Dees, 2008; Martin

& Osberg, 2007; Peredo & McLean, 2006; Reis & Clohesy, 2001). This dissertation uses this foundation of entrepreneurship and innovation to evaluate and explain the work of foundations, nonprofits, and for-profit organizations in providing public goods. Griliches (1979) first put forth the knowledge production function to estimate the role of R&D activity on growth and knowledge (Griliches, 1979). Since then, the production function has been applied to measure the impact on various innovation output (Audretsch & Feldman, 1996; Feldman, 1994; Freel, 2005; Geroski, 1990; Slavtchev & Fritsch, 2005). Studies have found positive relationships between knowledge spillovers and firm innovation (Audretsch & Feldman, 1996; Feldman, 1994; Slavtchev & Fritsch, 2005), and that innovation also builds on experience so existing innovation furthers future work (Feldman, 1994). Thus, knowledge production should be studied at the spatial unit, as opposed to firm-level (Audretsch & Feldman, 2004). This thorough literature on innovation production needs to be applied more often to the empirical analysis of social innovation to better understand the motivations and consequences of its actions.

1.4 Methodological Considerations

Good data is a hurdle to assessing the private provision of public goods. There is little required reporting from organizations, especially with respect to social support. Active nonprofit organizations must file a form, the Form-990 or Form 990-PF, annually with the IRS. This form provides information on the financial standing of the organization and their grantmaking and lobbying activity. While the data is publicly available there is substantial cost and time associated with extracting it. Some organizations provide propriety data from the forms in a more usable format. Other information on organization's structures, programs, and policies in place are made publically available at the will of organizations or by watchdog entities that collect and assess organizations. But there is little data available through any source on the issue of outcomes and

impacts for nonprofits as it is very challenging to evaluate the success of a nonprofit's program or properly capture its impact. Evaluation efforts are thus limited.

The papers in this dissertation work past these data deficiencies by collecting and utilizing data from a variety of sources and applying multiple methodological research designs to employ rigorous quantitative and mixed methods approaches. The first paper designs and implements a survey to collect quantitative data on organization's behavior that is analyzed with econometrics. The second paper presents a hypothesized model of the types of philanthropic organizations. It then vets this classification scheme with econometric analysis of quantitative and qualitative data. The third paper develops a theoretical model for nonprofit organizations grounded in the theories of innovation, nonprofits, and competition and then empirically estimates the model.

1.5 Overview of the Dissertation

1.5.1 Chapter Two: Stepping Up: An empirical analysis of the role of social innovation in response to an economic recession

Categorizing organizations as either for-profit or nonprofit is a false dichotomy as existing for-profit firms are becoming more socially conscience while nonprofits are adopting profit-making activities to ensure their viability. This paper conceptualizes the array of social practices as a continuum of social innovation and empirically demonstrates variation not captured by legal designation. Designing and analyzing a survey from the US state of North Carolina, this paper examines how organizations across the continuum responded to the 2008 economic recession. Results indicate that more socially innovative organizations responded to the increase in need by increasing environmental, community, and employee support.

1.5.2 Chapter Three: What's in a Name? Disambiguating philanthropic grantmakers and their strategies

With the recent growth in American philanthropy has come increased attention to the results of foundations and nonprofits. However, there is still confusion about the types of organizations that comprise it, complicating the evaluation of nonprofits. Nonprofit, foundation, and association are classifying terms used interchangeably in organizations across legal and funding structure. This paper begins to address concerns of categorization and evaluation by presenting a classification of grantmakers by their funding source and strategy. Using data from the IRS Form 990 and Form 990-PF, this paper analyzes descriptive characteristics to vet this classification scheme and then analyzes grant-making behavior across the categories to assess their differences. Results show that focused organizations, both donation-based and endowed, provide more through grantmaking in terms of total giving and size of grant.

1.5.3 Chapter Four: The Race for a Cure: Collaborators or Competitors? Modeling the effects of competition in disease-specific charities

Economic theory holds that competition promotes innovation in the private market. In the third sector, however, the role of competition is uncertain: multiple nonprofits working toward the same goal likely means higher transaction costs from increased fundraising, marketing, and salaries. Disease-specific charities are driven to find cures, improve treatments, and provide patient support. In recent years, they have become more aggressive in funding research and providing public advocacy, even if their cause affects a small number of people. However, it is unclear whether this increased attention has led to a change in the rate of progress.

This paper contributes to the literature on research & development and nonprofit competition by developing and evaluating the first innovation production function for disease-

specific charities. The model develops the conditions that promote and deter progress in curing diseases, with careful attention to the role of competition. Using OLS regression analysis, the theoretical model is empirically tested in a sample of disease-specific and research-driven nonprofits. Data from the annual IRS Form 990 are used to test the effects of competition, organizational demographics, and expenditures on innovative outcomes. The estimation finds a positive effect of market share on grant investments, meaning that large organizations contribute more to research through grant making in more concentrated (less competitive) markets.

Table 1.1 Overview of Dissertation

	Chapter 2	Chapter 3	Chapter 4
Organization Type	North Carolina For-profits & Nonprofits	Grantmaking Nonprofits	Disease-specific Nonprofits
Data	Survey Data on Organizational Practices, 2012	Grant, Financial, & Organizational Data, 2007 – 2011	Financial, & Organizational Data, 2008 – 2011
Central Aims	--Document the variation in use of socially innovative practices across legal structure --Demonstrate how social innovation is used in reaction to economic recession	--Provide a simplified classification of grantmaking nonprofits --Estimate changes to grantmaking strategies by type during and after an economic recession	--Develop an innovation production model to evaluate the conditions that promote and deter progress --Evaluate the production function with multiple innovation-related outcomes
Policy Implications	--Highlights value and accuracy of hybrid legal structures for fostering public good provision --Demonstrates a positive link between socially innovative practices and supportive responses to economic downturn	--Shows variation in grantmaking strategies by revenue source and mission focus such that focused nonprofits give more towards research. --Total giving decreased for most nonprofits during the recession but average grant size was maintained.	--Indicates competitive markets may reduce nonprofit public good investments --Demonstrates the importance of labor quality on innovative outcomes --Highlights the relative effectiveness of large nonprofits in the face of rapid growth of small nonprofits

CHAPTER TWO: STEPPING UP: AN EMPIRICAL ANALYSIS OF THE ROLE OF SOCIAL INNOVATION IN RESPONSE TO AN ECONOMIC RECESSION

(With Maryann P. Feldman)²

2.1 Introduction

Organizations are typically either characterized as for-profit or nonprofit – an outdated dichotomy that does not accommodate the observed blended range of organizational practices and the improvised adaption to changing economic circumstances. Many for-profit businesses have made substantial changes to their practices to be more socially conscience at a time of greater need while nonprofit enterprises have adopted profit-making activities to ensure their viability in light of decreased government support and fewer private donations (Graddy-Reed, Feldman, & Trembath, 2013). Moreover, both for-profit and nonprofit organizations may be important contributors to their local economy depending on the quality of employment benefits provided, concerns for environmental sustainability, and contributions to address quality of life concerns in their community (Feldman, 2014). Relatively little is known about how organizational practices have shifted across the legal distinction of for-profit and nonprofit or how the 2008 recession affected the use of different practices. This paper contributes by examining the role socially innovative practices play in responding to economic challenges and considering how these practices vary by legal structure.

² This chapter has been accepted for publication. This is a pre-copyedited, author-produced version of the article accepted for publication at the Cambridge Journal of Regions, Economy, and Society following peer review. The version of record will be available online.

A variety of labels have been used to describe organizations that blend for-profit models with social goals. The terms *social enterprise* and *social entrepreneurship* have been applied to the adoption of revenue-generating models within nonprofit organizations (Dees, 2007; Foundation Center, n.d.-b) as well as to for-profit organizations operating with a social mission (Fleishman, 2007; Peredo & McLean, 2006). Terms like *triple bottom line* and *corporate social responsibility* are used to describe for-profit firms that attempt to create social benefit, while legal incorporation schemes, such as Low-Profit Limited Liability Corporation are introduced as a hybrid tax status. Other terms, like *fourth sector*, are being introduced more recently in a search for new definitions, with uncertain degrees of precision. There are discrepancies between the terms organizations use, their legal structure, tax status, and what they actually do. To move the agenda forward, we use the umbrella term *social innovation* to broadly capture organizational efforts aimed at alleviating social problems. Our focus is on innovative practices used by organizations to address societal problems and concerns.

This paper analyzes a survey of organizational practices in the US state of North Carolina to understand the range of practices in use and specifically examine how organizations responded to the 2008 economic recession. We conceptualize the use of social innovation practices as a continuum and reveal variation that is not captured by prevailing legal distinctions. The paper provides empirical evidence about how organizations across the continuum from for-profit firms to nonprofit organizations used social innovation to respond to the 2008 economic recession. Results indicate that many organizations, across the range of legal structure, responded to the recession by increasing support to the environment, their local community, or their employees. Existing social practices positively influenced the decision to provide support, indicating a deepening of commitment during the economic recession. This paper contributes to the process of identifying socially innovative organizations, documents variation in the use of social innovation practices

across legal structure, and demonstrates how social innovation was used in reaction to increased need due to an economic shock.

The paper is organized as follows. The next section reviews the theory and literature regarding social innovation. Section three presents the research design with a review of North Carolina's economy, the survey design, and empirical methods. Results are presented in section four. The final section concludes with discussion and implications of our finding, and suggestions for future research.

2.2 Defining Social Innovation: Existing Theory & Literature

Social innovation is an emerging field of research that lacks a conclusive definition and theoretical framework. While the practice is not new, the concept has grown in popularity in recent years as seen by President Obama's creation of the Office of Social Innovation in 2009 and the increased presence of the topic in academic publications³ (Figure 2.1).

The burgeoning field has a spectrum of prior research that utilizes varying definitions and research methods. According to Stanford's Center for Social Innovation (2009), social innovation "is a novel solution to a social problem that is more effective, efficient, sustainable, or just than present solutions and for which the value created accrues primarily to society as a whole rather than private individuals". Much of the existing literature follows this definition and frames social innovation as an extension of innovation applied to social problems (Brozek, 2009; Dees, 2008; Martin & Osberg, 2007; Peredo & McLean, 2006; Reis & Clohesy, 2001). Related terms of *social entrepreneurship* and *social enterprise* are also used in the literature to describe individuals and organizations that strive to create social innovation (Dees, 2008; Foundation Center, n.d.-b; Martin & Osberg, 2007; McGrath & Desai, 2010; Peredo & McLean, 2006). While efforts to define the concept have focused on ties to

³ Conducted using Scopus Database, this number includes journal articles, conference papers, and book chapters.

innovation and entrepreneurship literature, theoretical developments have been made by grounding the practice in institutional theories of social capital, organizational change, and legitimacy (Agrawal & Hockerts, 2013; Habisch & Adai, 2013).

While much progress has been made in developing our understanding of social innovation, we are still limited in our knowledge of how social innovation is produced. Social innovation can be understood as the process of creating novel solutions to further a social good – it is innovation relating to the solution of a social problem (Mulgan, 2006; Pol & Ville, 2009). Thus there may be direct and indirect paths and as a result multiple motives that lead to its creation. When discussing production however, the literature focuses on social entrepreneurship as the only route to social innovation, thus ignoring other viable organizational pathways. Other literatures highlight alternative ways that organizations provide for the public good without reference to their common goal of achieving social innovation.

Figure 2.2 presents the multiple paths to social innovation that existing literature has focused on separately. The most direct path is through organizations, whether they be for-profit, nonprofit, or a hybrid structure, that are created with the explicit aim to attempt to address a social problem. For example, TOMS Shoes is a for-profit entity with a business model that provides a pair of shoes to a person in need with every pair of fashion shoes purchased.

However there are indirect paths as well. Any innovation may have a social effect: profit-seeking business technological or organizational innovation can produce externalities that generate social benefit (Pol & Ville, 2009). Thus businesses can indirectly create a social innovation through a positive externality with a social application. For example, a firm can offer training to enable current employees to engage with new production processes. This would be an alternative to closing a plant and moving to a greenfield site.

For-profits may also create social innovation through their social involvement, namely their corporate social responsibility practices. Corporate social responsibility (CSR) is the practice by for-profit firms to give back to their community through the provision of time, funding, or services. Reis and Clohesy (2001) find that female and young entrepreneurs as well as family-firms have the largest CSR profiles. Delevingne, (2009) finds that CSR is perceived to positively influence firm reputation, suggesting that firms may decide to expand their CSR programs in the wake of poor economic conditions. CSR's affect on financial performance has been indeterminate, with the most rigorous studies finding no effect (Aupperle, Carroll, & Hatfield, 1985; McWilliams & Siegel, 2000). This may be due to the diversion of profits into social innovation, which is reflected in marketing strategies (Hess, Rogovsky, & Dunfee, 2002). However, CSR decisions could be treated as profit maximizing investments that increases revenue more than the associated costs for a firm (McWilliams & Siegel, 2001).

These three alternative routes suggest that social innovation will not be limited to social enterprises but will span the range of organizational forms.

2.2.1 Innovation Out of Necessity: The Role of Economic Crisis

There is a more altruistic orientation that describes the rise of social innovation in the wake of an economic slump. As the economy slumps, firms may increase their philanthropy not just to garner more consumer support but also to sustain their community (Acs & Phillips, 2002). Our hypothesis is that organizations adopt new socially innovative practices in times of economic downturn, responding directly to greater need.

Given the lingering effects from the recent recession, there is a great deal of opportunity for organizations to step in where government funding is falling short. Many traditionally for-profit organizations are implementing more socially responsible, environmentally sustainable, and

community-oriented practices. This is occurring not only because of connection to local communities, but also out of necessity. In these difficult economic times, having first mover advantage and being the low cost producer are no longer sufficient strategies; thus, organizations are adopting a range of nontraditional practices, and offering a means to create viability in local communities at a time of decreased government capacity. Recognizing the importance of their workforce and their local community context motivates organizational response.

The multiple sources of social innovation coupled with the potential influence of economic conditions prompts three research questions:

What types of organizations engage in socially innovative behavior and what role does legal structure play? Since social innovation can come from any type of legal structure it is unclear if one type is more likely to create social innovation or more generally, attempt to create it.

What role does socially innovative behavior play in responding to a recession? As organizations are faced with business decisions in response to economic downturn, is their business behavior motivated by their social behavior?

What role does socially innovative behavior play in providing increased social support in response to the recession? We expect that those organizations that are more socially innovative would be more likely to increase social support when need is higher due to worsened economic conditions.

2.3 Research Design

To answer these questions, this study uses data from the 2012 North Carolina Social Innovation Survey to examine what role legal structure plays in achieving social innovation and how both influenced responses to the 2008 economic recession. The design utilizes one US state, North Carolina, to control for economic, political, and cultural conditions.

While social innovation as a practice benefits from a business' ability to create change and an entrepreneur's innovative approaches, it is weakened by the difficulty of defining and measuring social success (Dees, 2008). Thus a primary challenge to studying social innovation is finding an appropriate measure of it. As discussed previously, existing methods of classifying socially innovative organizations rely on legal structure or self-identification. Legal structure fails to capture socially innovative behavior that is occurring across multiple legal structures. Self-identifying terms are also a poor indicator as it assumes a universally accepted and known definition of the behavior. But there is no consensus on a common definition and the terms in use are not widely spread. These methods are biased and inefficient at classifying socially innovative organizations.

We, instead, proxy for social innovation by measuring an organization's investment in social goals, captured by the practices they have in place. Practices in place identify common behavior across organizations that may or may not describe themselves as socially innovative and across legal structure. It captures what an organization is actually doing to work towards social progress as opposed to what they would like to do. By surveying a variety of practices we are able to categorize behavior into classes around how challenging and costly they are to implement and by their area in the business process, whether it be in production, delivery, or investment. This approach, of using existing practices, provides a more concrete perspective to social engagement and provides perspective as to how organizations are operationalizing the concepts with which they may or may not identify.

This section follows with a brief presentation of North Carolina's economic and business environment, a review of the survey design and sample statistics, creation of key variables, and the methods for analysis.

2.3.1 Legal Structure and the Impact of the Recession in North Carolina

North Carolina, the 10th largest US state, has a population of approximately nine million residing in 85 rural and 15 urban counties. While currently growing, North Carolina's economy is in a state of transition as it moves away from labor-intensive manufacturing industries to technology and service industries with manufacturing losing over 100,000 jobs in the state since 2007 (Bunn & Ramirez, 2011). Although North Carolina's real GDP grew at a faster rate than the US from 2004 and 2009, the recession significantly damaged the state's economy and as of 2011, the state's median household income had declined to 84% of the US average, with high concentrations of wealth in the urban counties (Bunn & Ramirez, 2011). Further, the state unemployment rate rose from 5 to 11.2% between April 2008 and February 2009, with the poorest counties experiencing the highest peak of 13.3% in March 2010 (Bunn & Ramirez, 2011; Center on Poverty, Work and Opportunity, 2010).

Each state in the US is responsible for oversight of the legal structure of organizations within their boundaries. North Carolina has a common set of available legal structures for organizations. Traditional for-profit business forms include the corporation and the Limited Liability Company (LLC) or Partnership (LLP). These structures can be used by social enterprises as they permit flexibility, allow for private investment, and are often viewed as more efficient than nonprofit forms. Corporations make profits their primary aim but can incorporate social benefits as a factor in long-term profitability calculations while LLCs and LLPs incorporate a social purpose into the operating agreement (Graddy-Reed et al., 2013). North Carolina organizations may also form as a for-profit entity with cooperative principles in place. These organizations consist of members who share in ownership and governance rights.

These for-profit structures can also obtain a third-party certification of their social efforts. The most well-known option is the B Corp certification, which requires an impact assessment by B Lab, a private association. This is not the same as the benefit corporation business structure, which

is available in some states and is a for-profit organization with a social mission that submits an annual report on their social impact (Foundation Center, n.d.-b).

The Low-Profit Limited Liability Corporation (L3C) is a hybrid legal form of a for-profit business structure with an explicit charitable mission. It became available in North Carolina in 2010 for organizations that met the statutory requirements to advance a social goal, with the creation of profits as not a significant goal, and no political or legislative purpose. This form enables for-profit organizations to receive financing from private philanthropic foundations that previously was only available to nonprofits. However, the North Carolina legislature repealed the L3C as an available legal structure effective January 2014. Meaning no new organizations could register as an L3C but existing organizations could remain as such (Graddy-Reed et al., 2013).

North Carolina allows for the formation of tax-exempt nonprofit corporations. These organizations exist solely for a social mission and allow financing in the form of donations and grants. Nonprofits can incorporate for-profit strategies to accomplish their mission as long as the business activity is significantly related to its social purpose (Graddy-Reed et al., 2013).

2.3.2 Survey Design

The 2012 North Carolina Social Innovation Survey was a web-based survey. It received a 20% response rate from organizations in the state of North Carolina regarding their business, employee, community, and environmental practices. It was not a randomized study but utilized samples aimed at capturing statewide responses in urban and rural areas across industry and legal structure. Survey responses appear to be representative of organizations in the state and completion rates were not correlated to the size, age, or location of the organization. However, other limitations do exist from self-selection and non-response bias. Further, the survey was given out to organizations in the Fall of 2012, after the Great Recession, meaning the survey responses are

representative of organizations that survived the recession or were created after it; there is no information on the behavior of firms that failed as a result of the recession.

Seventy-one of the 100 counties are represented in the survey from across the state (Table 2.1).

There is an oversampling of urban respondents, who account for 71% of the sample while accounting for 58% of establishments with employees in the state (Figure 2.3).

North Carolina's Department of Commerce classifies each of the 100 counties in one of three economic distress tiers. Tier 1 is made up of the 40 most economically distressed counties, Tier 2 accounts for the middle 40 counties, and Tier 3 comprises the 20 least distressed. Counties are ranked annually based on their unemployment rate, median household income, population change, and property values in the previous year (Weisbecker, 2012). The designations are used in multiple state programs that provide tax credits to promote economic development (NC Department of Commerce, 2013). The 2013 classifications are used in this analysis because they were based on the 2012 economic conditions, the year of the survey. The survey sample's distribution of economic distress tiers is similar to the state's, however, Tier 2 establishments are somewhat underrepresented in the sample while Tier 3 organizations are overrepresented (Figure 2.4).

Of the 29 counties not represented in the survey, 20 are Tier 1 counties, or the most economically distressed. Their absence may be tied to a lack of Internet access. Since the survey was only available online, many potential respondents were not able to respond. More than 15 percent of the state's rural population lacks high-speed Internet access and all Tier 1 counties are rural, thus include areas without broadband coverage (NC Broadband, n.d.). This is a limitation in the results and of all internet-based surveys. It also limits the generalizability of the analysis of Tier 1 organizations to those with Internet access.

2.3.3 Sample & Descriptive Statistics

The sample for this analysis uses complete survey responses from organizations located in North Carolina counties, excluding government and quasi-government organizations. This produced a sample of 556 organizations.⁴ Table 2.2 presents the descriptive statistics for the sample and by sub-samples of legal structure and use of self-identifying terms.

Legal Structure

Legal structure historically identifies the types of practices and strategies an organization employs. However, these boundaries are blurring as nonprofits adopt for-profit strategies and for-profits become more socially involved. Survey respondents provided their legal structure. These values were categorized into three groups: *For-profit*, *Nonprofit*, and *Hybrid*. *For-profit* organizations consist of those that are not incorporated, operate as an LLC or LLP, or as an S or C corporation. *Nonprofit* organizations consist of those that reported a 501(c)3, 501(c)4, 501(c)6, or other nonprofit designation. *Hybrid* organizations are those with either an L3C or cooperative structure. As seen in Table 2.2, nonprofit or hybrid organizations were more likely to provide increased community support following the recession and have more community practices in place than for-profit organizations. However, for-profits provide similar levels of environmental and employee support and benefits. The similarities in many areas confirm that legal structure is not a clean indicator of socially engaged organizations.

Terminology

Respondents were asked to self-identify, using multiple classifying terms including *entrepreneurial*, *green enterprise*, *environmentally responsible*, *hybrid*, *for benefit*, *fourth sector*, *triple bottom line*, and

⁴ Respondents were asked to provide address information, which was optional. The survey received 1,004 responses with a survey completion rate of 62%.

social enterprise. These were grouped by type as *Entrepreneurial*, *Green* (containing *green enterprise* and *environmentally responsible*), or *Social/Hybrid* (containing *hybrid*, *for benefit*, *fourth sector*, *triple bottom line*, and *social enterprise*). Because there is no well-accepted definition of social innovation, the use of a definitive term is not an appropriate means of identifying socially innovative organizations. However, many do use terms that imply a social mission appropriately. Within this sample, those that used a social term of identification were significantly more likely to have increased environmental and community support in response to the recession, and have more environmental and community practices in place. It is important to note that those using social terms were also more likely to be in an urban county. This may mean that such terms are not geographically widespread in their use, another signal that they should not be used as the sole means of identification.

Innovation

Innovation is a process rather than simply an outcome. In order to innovate, firms must by definition try new things. Trying something new is risky and thus susceptible to failure. By asking firms about practices they have tried and their subsequent failures, there is an understanding of the risks they are taking and thus their efforts to innovate. Respondents were asked about failed or incomplete projects and socially engaged practices to capture this risk-taking behavior and innovative process. Both risk types and the combination of either attempt are fairly evenly distributed across respondents both by legal structure and self-identifying terminology, confirming that these distinctions do not serve as accurate measures to capture social innovation.

Responses to the Recession

Respondents were asked how they responded to the recession through two questions that addressed the introduction of new products and methods and changed practices. Regarding

products and methods, organizations were asked if following the recession they introduced new or improved: goods, services, methods of manufacturing or production, support processes, marketing methods, or methods of logistics, delivery, or distribution. The count of these responses creates the *Recession Introductions* variable, ranging from zero to six with a mean of 2.03 introductions. Twenty percent of survey respondents reported no new or improved introductions and approximately 27% reported one introduction. The most frequent response was introducing a new or improved service with roughly 40% of respondents followed with 37% reporting new or improved marketing methods.

Respondents were also asked if in response to the recession, their organization changed certain business and social practices. This included changes to decrease costs by: decreasing employment, increasing operating efficiency, and increasing material efficiency. Over half of respondents reported decreasing employment in response to the recession. The question also included options related to social involvement of: increasing environmentally sustainable practices, increasing assistance to the local community, and increasing assistance to employees. Environmental practices had the highest response of this set with 28% reporting increases. Only 16% of respondents indicated they increased support to their employees.

Respondents were also provided an additional option of *other* and space to describe these alternative changes. Almost 8% of respondents specified additional changes. Write-in responses fell into two categories of further methods of decreasing costs and expansion. Regarding cost related activities, respondents also reported that they decreased wages and benefits of existing employees and increased prices of goods and services to consumers. Regarding expansion, some respondents reported increasing employment and expanding into new branches of products and services. While these write-in responses could not be used in the analysis, as they were not posed to all respondents, they do provide a broader understanding of how organizations respond to an economic shock.

Scales of Social Engagement

Respondents were also asked about their engagement with a series of social practices – 11 environmental, 13 community, and 13 employee. Appendix Table 2.1 lists each of these practices, their frequency, and differences by legal structure and use of self-identifying terms. Figure 2.5 presents the quartile distribution of all practices by legal structure. Although there are heavier tails in either direction for each structure, both are well represented across the distribution again signaling that legal structure does not alone capture the social motivations of an organization

These practices were combined to form three series of scales. These scales proxy for socially innovative activity by capturing an organization's investment in social goals – how involved they are in achieving a social good based on the practices they are actually engaged in. The first series of scales are grouped around the focus area of practices. They are count scales of the number of environmental, community, and employee practices an organization has in place. These scales do not capture how valuable or innovative any one practice is but instead captures the breadth of support an organization has in either the environment, their community, or their employees with the premise that organization's with a higher number of practices are more socially engaged and devoted to meeting a social mission.

The second series of scales was created by dividing the former by type of practices. Environmental practices were divided into two categories of basic (recycle, conserve water, and save energy) or advanced (track emissions, produce renewable energy, etc.) practices. Community practices were divided into three categories of production related (local suppliers, suppliers with good practices, etc.), donation-based (company service day, donate use of facilities, etc.), and outreach activities (support K-12 education, promote economic equality). Employee practices were divided into two categories of benefits (retirement contributions, health insurance, etc.) and investments (job-training, employee education, etc.) in employees. These more detailed scales group

practices by focus and attempt to capture the value of practices as they relate to solving social problems.

The third series of scales groups these more detailed scales across focus area to capture a more fluid picture of social engagement. This consists of three scales: basic, production, and investment. The basic scale includes the employee benefits and basic environmental practices. These are practices that are important at an individual level but do not directly work to solve a large social problem and are well spread across organizations. The production scale includes the advanced environmental and production-related community practices. These practices likely provide personal advantages and benefits to the organization but also contribute to meeting larger social goals. Finally, the investment scale includes the community donation, community activities, and employee investment practices. These practices may also provide some benefit to the organization but are significantly contributing to a social mission – they are practices that signal a desire to improve a community through innovative strategies.

2.3.4 Methods

Three models were run using the survey data to assess the role of legal structure in social engagement and how both impacted responses to the 2008 economic recession. Adjustments were made to certain variables. *Start Year Categories* was created from the year an organization began to categorize respondents into one of four bins given the average lifespan of a firm is now fifteen years (Gittleston, 2012). *New firms* contains organizations created between 2008 and 2012; *Young firms*, those 15 years old or younger, were created between 1997 and 2007; *Established firms* were created between 1981 and 1996, and *Lasting firms* were created before 1980. The number of employees was also categorized and divided into groups to create the variable *Employee Categories*. It is comprised of five

bins of: *Very small* (two to four employees), *Small* (five to 15), *Medium* (16 to 85), *Large* (86 to 500), and *Extra Large* (over 500 employees).

Organizational Traits in Socially Innovative Practices

Given the challenges in identifying socially innovative organizations it is unknown what types of organizations are engaged in this behavior. The scales of social engagement are used here as a proxy for social innovation as they capture the breadth of investment an organization makes towards a social aim. The organizational factors are then examined that influence the number of practices an organization has incorporated. Equation 2.1 regresses the number of practices an organization has in place on legal structure and other organizational traits.

$$\log(\text{Social Engagement Scale}) = \alpha + \beta_1 NP + \beta_2 Hyb + \beta_z Z \quad (2.1)$$

The key independent variable of interest is the legal structure of the organization. Legal structure is included as a categorical variable with binary indicators for nonprofit (*NP*) and hybrid (*Hyb*) with for-profits as the referent group. Additional covariates (*Z*) included are the types of self-identification terms used by an organization (*entrepreneurial*, *social/hybrid*, and *green*), age of organization, size by number of employees, location in an economic distress tier, and presence of innovative behavior.

This model evaluates the importance of organizational traits across multiple scales including the count scale of all social practices in place, the combination of employee and community practices, and then the three grouped scales of investment, production, and basic practices. This will help establish if certain traits are more important to certain types of social involvement.

Since each of the scales are count variables, either a negative binomial or Poisson model is used. For each regression a Poisson model was run and a goodness of fit test calculated. If the Poisson model was rejected, the negative binomial model was run and confirmed through the

likelihood ratio test. The Poisson model was used for the production and basic practices scales but rejected for the combination scales and investment scale, resulting in the use of a negative binomial model.

Responding to the Recession: Introduction of New Products & Methods

The differing social scales are then used as explanatory variables in assessing the response to the recession made by organizations. Were more engaged organizations more likely to be proactive in their business response to the recession? Equation 2.2 addresses this question by regressing the business response of an organization on their scale of practices, legal structure, and other organizational demographics.

$$\log(\text{Number of Recession Introductions}) = \alpha + \beta_1 \text{Scale} + \beta_2 \text{NP} + \beta_3 \text{Hyb} + \beta_z \text{Z} \quad (2.2)$$

The outcome variable used is the number of introductions made in response to the recession. As discussed above this is a count ranging from zero to six and includes the introduction of new or improved goods, services, logistics, processes, marketing, or manufacturing methods. This captures how diversified organizations were in responding to the economic downturn.

The key independent variable is the scale of social engagement. Three models are run using different types of scales. The first uses the simple count scales by type of practice – environmental, community, and employee. The second utilizes the three grouped scales of investment, production, and basic practices. The third uses the detailed scales of basic and advanced environmental, production, donation, and activity in the community, and employee benefits and investment.

Legal structure is also included as a categorical variable with nonprofit and hybrid structures in reference to for-profits, as it was in the modeling of social innovation (Equation 2.1). It is included here to account for any additional impact it may have outside of its influence on the social engagement scales. Control variables included the types of self-identification terms used by an

organization (*entrepreneurial*, *social/hybrid*, and *green*), age of the organization, number of employees, location in an economic distress tier, and presence of innovative behavior.

Due to the count nature of the outcome, both a negative binomial and Poisson model were fitted. However with each case, the Poisson was rejected through the goodness of fit and likelihood ratio tests resulting in the use of the negative binomial model.

Responding to the Recession: Increasing Social Support

Finally, the social scales are used to examine what types of organizations responded to the increased need from the recession with increased social support. Equation 2.3 regresses the decision to increase any type of social support (environmental, community, or employee) on a series of organizational characteristics and demographics (Z) and the scales of practices in place.

$$\log(\text{Increased Social Support}) = \alpha + \beta_n \text{Scales} + \beta_z Z \quad (2.3)$$

The key independent variables are the individual social scales by either general type (environmental, community, and employee) or detailed type (basic and advanced environmental, production, donation, and activity in the community, and employee benefits and investment). Control variables include whether the organization is a for-profit or not, the age of the organization, number of employees, economic distress tier of their county, the types of self-identification terms used by an organization (*entrepreneurial*, *social/hybrid*, and *green*), and the presence of innovative behavior.

There is, however, the potential for endogeneity between responsiveness to increased need and the number of social practices currently in place. To obviate this concern, additional models were run by each type of social support (environmental, community, and employee) while omitting the corresponding type of practices, correcting for any potential endogeneity (Equations 2.4-2.6).

$$\log(\text{Inc Environmental Support}) = \alpha + \beta_n \text{ComScales} + \beta_m \text{EmpScales} + \beta_z Z \quad (2.4)$$

$$\log(\text{Inc Community Support}) = \alpha + \beta_n \text{EnvScales} + \beta_m \text{EmpScales} + \beta_z Z \quad (2.5)$$

$$\log(\text{Inc Employee Support}) = \alpha + \beta_n \text{EnvScales} + \beta_m \text{ComScales} + \beta_z Z \quad (2.6)$$

Due to their binary outcome values, these equations were fitted with logit models to examine what factors influence an organization's decision to increase social support in response to the recession.

2.4 Results

Empirical results are presented in Tables 2.3, 2.4 and 2.5, which are discussed in turn.

2.4.1 Organizational Traits in Socially Innovative Practices

Table 2.3 presents the marginal effects resulting from Equation 2.1 evaluated at the various scales of social practices. The estimations' predicted means slightly overestimate the real sample means but are very similar. The importance of organizational traits vary by scale.

Looking first at model 5, basic practices, we see that age and size most impact the number of practices in place. These practices are widespread across organizations and in high frequency and thus least likely to be an indicator for socially innovative organizations. The results show no significant effect from innovation or using entrepreneurial or hybrid terminology. Further, legal structure has only a small effect with nonprofits providing a third of a practice more on average than similar for-profit organizations.

However, in model 3, with the outcome of investment practices, we see large and significant effects from legal structure and innovation activity. Being a hybrid as opposed to a for-profit is associated with an additional 4.3 investment practices on average while being a nonprofit has a smaller but still significant effect of less than one additional practice than a for-profit. Being innovative or using hybrid terminology similarly are associated with almost one more additional

practice, on average. Being a larger organization or in a less economically distressed area are also positive and significant indicators of investment practices.

Model 2 uses the count of employee and community practices in total - this includes the investment practices but also practices less likely to be associated with social innovation. Results show similar but larger effects than in model 3. Isolating the production related practices in model 4 that may lead to social aims but also benefit the organization so much weaker effects than model 3.

These results indicate that legal structure and terminology are indicators of social behavior and they are positively associated with the use of practices more strongly linked to social innovation (model 3). This effect indicates that those that select a hybrid legal structure are doing so appropriately as they have a *policy* significant number of more practices in place, as compared to for-profits. There is less of an obvious distinction between nonprofits and for-profits with an average difference of less than one practice. This indicates that these traditional legal structures are not a good indicator of one being inherently more socially innovative.

Use of a social term is a positive but not a strong indicator of social innovation with having almost one more practice on average than those that did not use a social term. This confirms that using self-identification, as a means of classifying socially innovative organizations, is not a good policy. This may be because there are not set definitions of the terms and that the terms are not widespread. Overall, hybrid legal structure is the strongest predictor of investment related practices, signifying the importance of these alternative structures in promoting social innovation.

2.4.2 Responding to the Recession: Introduction of New Products & Methods

Table 2.4 presents the marginal effects resulting from the negative binomial model of introductions made in response to the recession. The model fitted an average of 1.96 introductions as compared to the sample average of 1.88.

Self-identifying as entrepreneurial had a consistent positive and significant effect of 0.6 additional introductions following the recession. Innovation had a smaller but still consistent positive and significant effect of 0.4 additional introductions on average. However, legal structure failed to have a significant effect on introductions as did an organization's age and location.

In model 1, the general count of environmental and community practices are positively associated with introductions. In model 2, these elements are highlighted again with production-related and investment practices being significant. When broken down by detailed type in model 3, only advanced environmental practices are significant with 0.14 more introductions on average. Given the predicted average of 1.96 practices, this represents approximately a 7.3% change in the average outcome. Though significant this is a much smaller indicator than self-identifying as entrepreneurial which represented a 30.6% change from the fitted average. The results indicate that organizations with advanced environmental practices are slightly more likely to respond to the recession with more business changes but the overall minimal effect of socially innovative practices indicates that they are not a strong driver of business-related introductions post recession.

2.4.3 Responding to the Recession: Increasing Social Support

Table 2.5 presents the marginal effects from the logistic regressions used to analyze the response of increased social support. Models 1 and 2 on any social support produced a similar fitted average to the sample mean of 0.41 as compared to the sample mean of 0.43. Models 3 and 4 run similar models for environmental support only, while models 5 and 6 examine the effects on community support, and models 7 and 8 on employee support; all with similar predicted means to their sample means.

The number of community practices is positively and significantly associated with increasing environmental and employee support with a 3.3 or 3.9 percentage point increase in probability on

average, respectively. Increased employee practices are positively and significantly associated with increased community support but not environmental. These results hold with the detailed scales with production-related community practices, community activities, and investment in employees positively affecting additional social support. Increased investment in employees, practices that are associated with social innovation, is associated with a 3.8 percentage point increase on average in the probability of providing additional community support in response to the recession. Similarly, increased community activities, practices also associated with social innovation, are associated with an increase of 5.0 percentage points in the probability of providing employee support. These results indicate that socially innovative practices are small indicators of providing additional social support following an increase in need.

Innovative activity and self-identification as entrepreneurial are stronger indicators of increasing employee support with an average increase in probability of approximately 9 percentage points. Use of a social or hybrid identification term is associated with roughly a 10 percentage point increase in the probability of providing community support. Community support was the only type for which legal structure matters – being a for-profit decreases the probability of providing community support by approximately 10 to 12 percentage points, on average. Being in a Tier 2 as opposed to Tier 1 county increased the probability of providing community support by approximately 17 percentage points on average, while there was no statistical difference between Tier 1 and Tier 3 county residents. This may mean that Tier 2 counties, those that are distressed but still have resources had the increased need and had the resources to meet it while Tier 3 had less need and Tier 1, less resources.

2.5 Discussion

Organizations have begun to adopt a range of socially engaged practices in an attempt to create viability in local communities at a time of decreased government capacity. In an effort to determine identification of socially innovative organizations, this analysis highlights the importance of hybrid legal structures. Though the L3C is no longer available in the state of North Carolina, organizations that incorporated as L3Cs and as cooperatives did so appropriately – they self-selected into a legal structure that allowed for their high level of social engagement. The results suggest that this tax status encourages greater involvement from organizations in the provision of public goods and provides support for the value of having this option. Given the low cost to states to implement hybrid legal structures that do not decrease tax revenue North Carolina should reconsider their policy regarding the L3C. This analysis also provides support for the introduction of the L3C as a means of fostering social involvement from private organizations in other US states, where debate is underway on whether to adopt the structure.

Regarding terminology, many organizations that engage in socially innovative practices do not use a social term to self identify. Although the various labels have proliferated they have not widely diffused and still lack a definitive definition. Many who are socially innovative do not identify with a social term thus making it an inefficient indicator of socially innovative organizations. The many organizations pushing these multiple terms should instead focus their efforts on providing support to organizations to be more socially engaged. A widely accepted and simple term and definition are necessary for this type of work to flourish. Such consensus can shift the focus away from marketing terminology and towards behavioral change. If the goal is increasing social support, the actions by these support organizations should be focused on educating organizations about practices they can implement, not terms they can use.

In considering responses to the recession, many organizations introduced new or improved products and methods to survive the economic downturn. Organizations that did so were more likely to be innovative and have advanced environmental practices. Legal structure did not provide a means of identifying these organizations, nor did age or location. This implies that organizations across type and place were proactive responders to the recession.

In terms of social support, many organizations increased their support to sustaining the environment, their local community, or their employees in response to the recession. Organizations with more socially innovative practices were more likely to increase social support. When the recession increased need for such support, many organizations working towards social goals responded by increasing support to their employees and communities. With global concern over government's ability to provide or sustain public good provision, private organizations are becoming more valuable in their service to their communities. Encouraging this social involvement and focus in organizations may then increase support to the public at the crucial time of an economic downturn.

The 2012 North Carolina Social Innovation Survey has some limitations. Since it was executed in 2012, it provides no record of organizations that did not survive the economic recession of 2008. These organizations would have provided a valuable counterfactual in terms of their social engagement and perhaps enlightened organizational characteristics correlated with not surviving the recession. In addition, many Tier 1 counties, those that are the most economically distressed, were not represented. This may be due in part to the limited Internet access available in those counties. Internet-based surveys prevent this segment of the population from participating and thus responses are not representative of those without access. There are also limitations to using one state as a case study. Using one state as a case limits the external validity of the results, as the interpretation of results cannot be extrapolated to other states or regions. However it does provide a starting point to

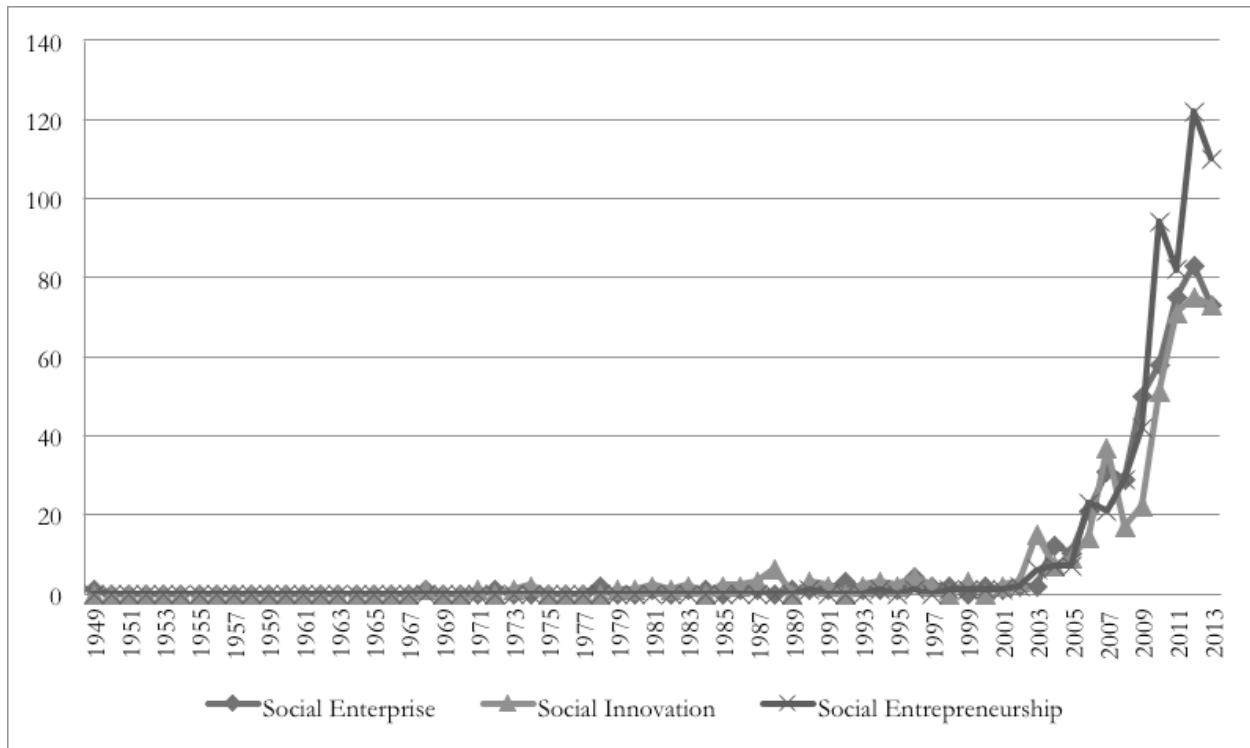
evaluate the response to a recession through social practices while controlling for the political, economic, and cultural atmospheres of a state.

More research is needed from a larger sample that crosses over state boundaries. This will allow the results to be vetted in multiple geographies to examine if different states inherently respond differently to crises. Also, a follow-up study should be done within North Carolina to see if the introductions and increased social support in response to the recession had lasting affects for the organizations and if these efforts improved their surrounding economy.

This paper examines the difficulty in identifying socially innovative organizations as their behavior crosses legal boundaries, self-identification, and organizational characteristics and puts forth a classification method that utilizes how organizations operationalize their social mission. Knowing the extent to which organizations are incorporating practices provides a means of accurately identifying the more socially engaged organizations. These more engaged organizations were more pro-active in responding to the economic recession by providing needed support to their employees and communities. This paper contributes to the literature on social innovation by clarifying the pathways to social innovation, demonstrating the organizational traits associated with socially innovative practices, highlighting the value and accuracy of hybrid legal structures, and demonstrating a link between socially innovative practices and supportive responses to economic downturn.

Figures

Figure 2.1: Frequency of “Social Innovation” and related terms in academic publications



Source: Scopus Database

Figure 2.2: Sources of Social Innovation

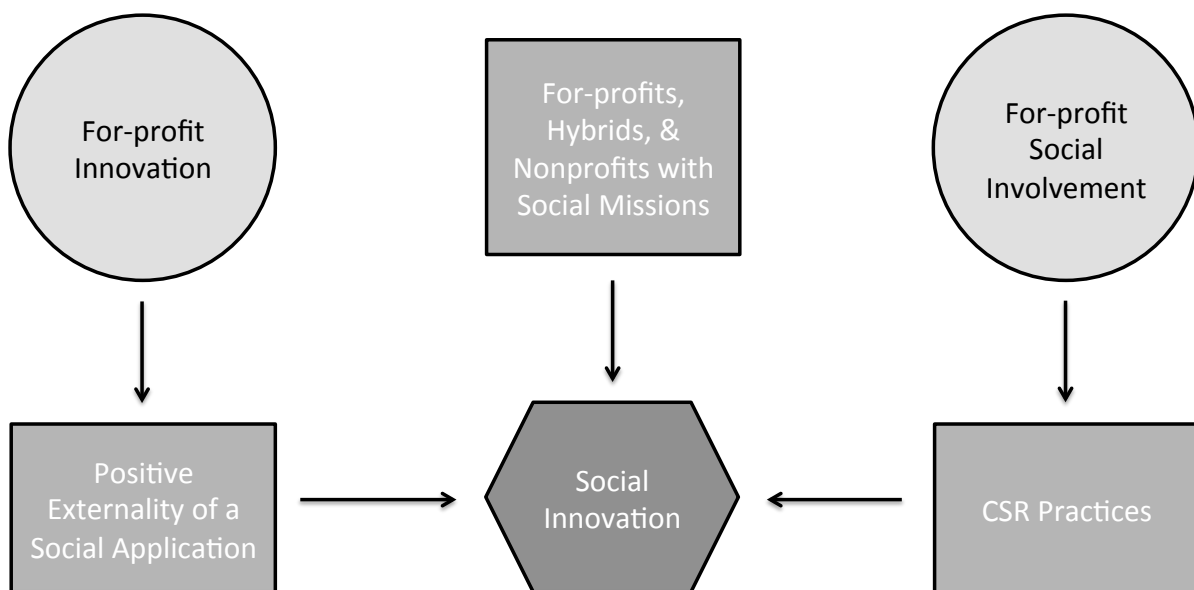
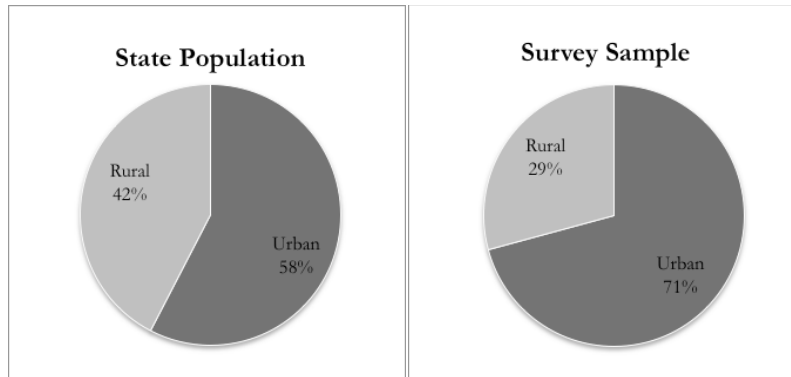
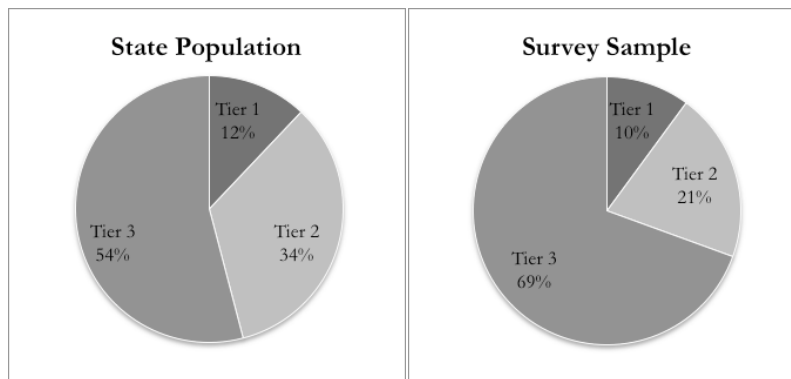


Figure 2.3: Comparison of State and Sample Rural-Urban Distributions of Establishments with Employees



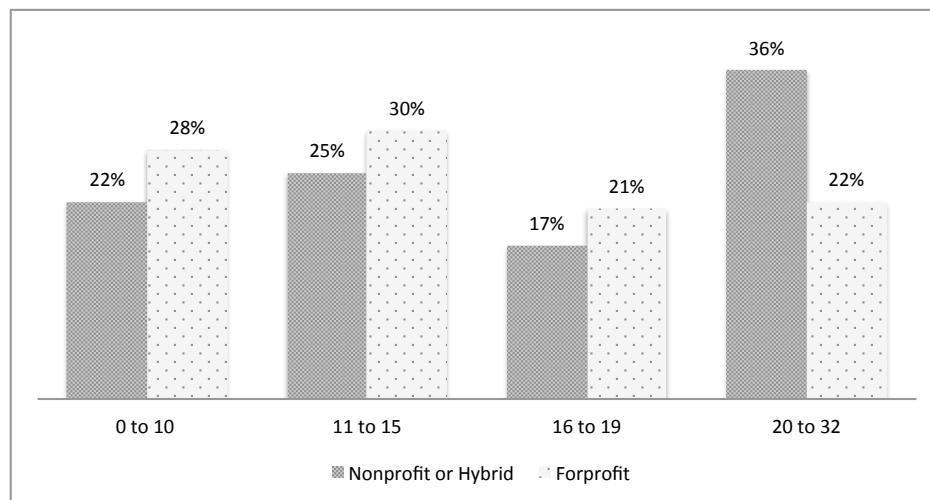
Source: NC Employment Security Commission 2011 via the Rural Center Data Bank

Figure 2.4: Comparison of State and Sample Economic Distress Tier Distributions of Establishments with Employees



Source: NC Employment Security Commission 2011 via the Rural Center Data Bank

Figure 2.5: Quartile Distribution of All Social Practices by Legal Structure



Tables

Table 2.1: Comparison of State and Survey Sample County Distributions

Counties	State	Sample	Share Represented
Urban	15	15	100%
Rural	85	56	66%
Tier 1 Urban	0	N/A	N/A
Tier 1 Rural	40	20	50%
Tier 2 Urban	7	7	100%
Tier 2 Rural	33	25	76%
Tier 3 Urban	8	8	100%
Tier 3 Rural	12	10	83%
Total Counties	100	71	71%

Table 2.2: Descriptive Statistics by Legal Structure and Hybrid Terminology Sub-Samples

VARIABLES	Total	Nonprofit or Hybrid	For-Profit		Hybrid ID Term	Term Not Used	
	N = 556	N = 124	N = 432		N = 246	N = 287	
Start Year of Organization	1987.00 (24.87)	1983.60 (26.91)	1988.00 (24.22)	*	1987.90 (25.15)	1986.10 (24.65)	
Number of Employees	1259.60 (12391.80)	116.50 (369.90)	1587.40 (14044.50)		1762.40 (16045.80)	797.50 (7651.70)	
Legal Structure							
Nonprofit	0.22	0.99	-		0.30	0.15	
Hybrid	0.003	0.01	-		0.01	0.00	
For-profit	0.78	-	-		0.69	0.86	
Rural County	0.28	0.15	0.32	***	0.21	0.35	***
Community's Economy				***			**
Growing	0.19	0.23	0.17		23.17	14.63	
Stable	0.29	0.36	0.27		31.71	27.53	
Mixed	0.34	0.33	0.34		31.30	35.89	
Declining	0.14	0.03	0.17		9.76	16.72	
Uncertain	0.05	0.05	0.05		4.07	5.23	
Self-Identification Terms							
Entrepreneurial	0.74	0.57	0.79	***	0.79	0.69	*
Green	0.67	0.62	0.68		0.79	0.56	***
Social/Hybrid	0.48	0.66	0.43	***	-	-	
Innovative Activity							
Business	0.53	0.51	0.53		0.54	0.51	
Social	0.20	0.20	0.20		0.21	0.20	
Either	0.60	0.61	0.59		0.63	0.57	
Post-Recession Changes							
Decreased Employment	0.52	0.53	0.52		0.48	0.55	**
Increased Operating Efficiency	0.79	0.78	0.80		0.82	0.77	
Increased Material Efficiency	0.34	0.30	0.35		0.31	0.36	
Increased Environmental Support	0.28	0.23	0.30		0.38	0.19	***
Increased Community Support	0.18	0.30	0.14	***	0.23	0.13	**
Increased Employee Support	0.16	0.14	0.16		0.18	0.14	
Post-Recession Introductions	2.03	2.00	2.04		2.20	1.87	*
Range: 0 - 6	(1.51)	(1.26)	(1.58)		(1.50)	(1.51)	
Environmental Practices	3.46	3.36	3.48		4.10	2.93	***
Range: 0 - 11	(2.32)	(2.18)	(2.35)		(2.42)	(2.08)	
Community Practices	4.56	5.74	4.24	***	5.65	3.65	***
Range: 0 - 13	(3.30)	(3.20)	(3.25)		(3.31)	(3.03)	
Employee Practices	7.12	7.28	7.07		7.30	7.00	
Range: 0 - 13	(2.72)	(2.75)	(2.71)		(2.72)	(2.68)	

Standard deviations in parentheses; Proportions reported for binary variables
T-test or PR-test results significance levels: * p<0.05, ** p<0.01, *** p<0.001

Table 2.3: Scale of Social Innovation Regression Results

VARIABLES	(1) All Practices	(2) Emp & Com Practices	(3) Investment Practices	(4) Production Practices	(5) Basic Practices
Age of Organization [Post Crash (2008-2012)]					
Young (1997 - 2007)	0.777 (0.768)	0.0992 (0.603)	-0.355 (0.458)	0.159 (0.271)	0.884*** (0.322)
Established (1981 - 1996)	0.903 (0.838)	0.799 (0.660)	0.0279 (0.500)	-0.0311 (0.293)	0.807** (0.331)
Lasting (1980 or older)	0.954 (0.897)	-0.342 (0.688)	-0.658 (0.521)	0.299 (0.301)	1.056*** (0.337)
Employee Count [Very Small (<5 employees)]					
Small (5-15)	1.452** (0.654)	1.235** (0.496)	0.512 (0.372)	-0.261 (0.320)	0.998*** (0.262)
Medium (16-85)	3.339*** (0.713)	3.291*** (0.547)	1.521*** (0.407)	-0.408 (0.321)	1.614*** (0.262)
Large (86 - 500)	6.487*** (0.927)	5.172*** (0.693)	2.920*** (0.522)	-0.266 (0.357)	2.525*** (0.272)
Extra Large (500+)	7.308*** (1.270)	4.459*** (0.896)	2.639*** (0.679)	-0.198 (0.443)	2.817*** (0.302)
Economic Distress Tier [Tier 1 (most distressed)]					
Tier 2	1.108 (0.875)	1.607** (0.643)	0.976** (0.475)	-0.289 (0.293)	0.147 (0.278)
Tier 3	1.689** (0.790)	2.096*** (0.574)	1.317*** (0.423)	-0.351 (0.249)	0.423* (0.257)
Legal Structure [For-profit]					
Nonprofit	0.941 (0.640)	1.764*** (0.479)	0.751** (0.355)	-0.329 (0.211)	0.366* (0.204)
Hybrid	9.507*** (3.401)	6.093** (2.493)	4.322** (1.726)	1.052*** (0.386)	-0.0312 (0.718)
Either Innovation Type	1.212** (0.502)	0.849** (0.378)	0.817*** (0.281)	0.279 (0.176)	-0.128 (0.157)
Entrepreneurial ID Term Used	-0.178 (0.580)	-0.158 (0.435)	-0.143 (0.323)	-0.165 (0.190)	0.0804 (0.186)
Social/Hybrid ID Terms Used	2.253*** (0.538)	1.051** (0.410)	0.853*** (0.305)	0.904*** (0.185)	-0.193 (0.188)
Green ID Terms Used	3.726*** (0.574)	-0.299 (0.476)	-0.310 (0.353)	2.693*** (0.259)	0.491** (0.194)
Scale of Environmental Practices		0.767*** (0.0980)	0.443*** (0.0723)		
Scale of Employee Practices				0.148*** (0.0421)	
Scale of Community Practices					0.125*** (0.0275)
Predicted Mean	15.292	11.809	6.828	2.954	5.231
Sample Mean	14.933	11.534	6.615	2.860	5.169
Model	Negative Binomial	Negative Binomial	Negative Binomial	Poisson	Poisson

Marginal Effects reported; Standard errors in parentheses; (4) & (5) uses Robust Standard Errors
N = 477; Referent group in brackets; *** p<0.01, ** p<0.05, * p<0.1

Table 2.4: Scale of Post-Recession Introductions Negative Binomial Regression Results

VARIABLES	(1)	(2)	(3)
Legal Structure [For-profit]			
Nonprofit	0.0854 (0.189)	0.0907 (0.187)	0.164 (0.197)
Hybrid	0.774 (1.212)	0.820 (1.214)	0.662 (1.219)
Either Innovation Type	0.383** (0.152)	0.367** (0.152)	0.364** (0.153)
Self-Identifying Terms Used			
Entrepreneurial	0.602*** (0.176)	0.608*** (0.176)	0.605*** (0.177)
Social/Hybrid	-0.00891 (0.167)	-0.0190 (0.167)	-0.0160 (0.168)
Green	-0.0295 (0.193)	-0.00953 (0.192)	-0.0534 (0.196)
Scales of Practices			
Environmental	0.117*** (0.0408)		
Community	0.0592** (0.0262)		
Employee	0.0319 (0.0371)		
Basic		0.0247 (0.0507)	
Production-Related		0.121*** (0.0410)	
Investment		0.0558** (0.0265)	
Basic Environmental			0.0878 (0.0865)
Advanced Environmental			0.144*** (0.0520)
Production in the Community			0.0542 (0.0872)
Community Donation Types			0.0331 (0.0732)
Community Activities			0.0667 (0.0538)
Employee Benefits			-0.0255 (0.0675)
Investment in Employees			0.102 (0.0775)
Predicted Mean (Sample Mean: 1.881)	1.959	1.960	1.963
Significant Demographics	Size (+)	Size (+)	Size (+)

Marginal Effects of negative binomial regressions reported; N = 407

Standard errors in parentheses; Referent group in brackets; *** p<0.01, ** p<0.05, * p<0.1

Each regression includes controls for age, economic distress tier, and size (employee count)

Table 2.5: Post Recession Increases to Social Support Logistic Regression Results

VARIABLES	Any Social Response		Environmental		Community		Employee	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
For-profit Legal Structure	-0.0428 (0.0597)	-0.0569 (0.0621)	0.0430 (0.0535)	0.0481 (0.0559)	-0.0984** (0.0455)	-0.120** (0.0482)	0.0364 (0.0447)	0.0359 (0.0445)
Economic Distress Tier [Tier 1]								
Tier 2	0.0181 (0.0842)	0.0217 (0.0835)	-0.0917 (0.0799)	-0.0839 (0.0801)	0.166** (0.0736)	0.173** (0.0711)	-0.0498 (0.0668)	-0.0461 (0.0665)
Tier 3 (Least Distressed)	-0.0640 (0.0784)	-0.0583 (0.0780)	-0.126* (0.0753)	-0.115 (0.0759)	0.0785 (0.0623)	0.0893 (0.0591)	-0.0429 (0.0627)	-0.0390 (0.0632)
Either Innovation Type	0.0391 (0.0469)	0.0306 (0.0470)	0.0948** (0.0425)	0.0936** (0.0424)	0.0227 (0.0410)	0.0178 (0.0416)	0.0889** (0.0369)	0.0898** (0.0366)
Self-Identifying Terms Used								
Entrepreneurial	0.0626 (0.0518)	0.0660 (0.0517)	0.0914* (0.0483)	0.0919* (0.0483)	-0.0195 (0.0446)	-0.0220 (0.0450)	0.0843** (0.0417)	0.0857** (0.0418)
Social/Hybrid	0.0460 (0.0500)	0.0384 (0.0500)	0.0364 (0.0460)	0.0375 (0.0462)	0.109** (0.0436)	0.106** (0.0437)	-0.0536 (0.0410)	-0.0540 (0.0406)
Green	0.103* (0.0579)	0.0798 (0.0588)	0.261*** (0.0548)	0.236*** (0.0565)	-0.0181 (0.0535)	-0.0219 (0.0535)	-0.0189 (0.0463)	-0.0192 (0.0472)
Scales of Practices								
Environmental	0.0226* (0.0127)				0.00950 (0.0107)		-0.00318 (0.00986)	
Community	0.0404*** (0.00756)		0.0325*** (0.00703)				0.0390*** (0.00608)	
Employee	0.0100 (0.0112)		0.00770 (0.0103)		0.0258** (0.0102)			
Basic Environmental		0.00946 (0.0262)				0.0402* (0.0238)		-0.00288 (0.0202)
Advanced Environmental		0.0272 (0.0170)				0.00198 (0.0143)		-0.00307 (0.0125)
Production in the Community		0.0819*** (0.0250)		0.0728*** (0.0224)				0.0369* (0.0214)
Community Donation Types		0.0372 (0.0230)		0.0147 (0.0207)				0.0175 (0.0161)
Community Activities		0.0196 (0.0160)		0.0196 (0.0147)				0.0500*** (0.0119)
Employee Benefits		-0.00439 (0.0206)		0.0147 (0.0192)		-0.00323 (0.0188)		
Investment in Employees		0.0291 (0.0229)		0.00932 (0.0209)		0.0382* (0.0207)		
Predicted Mean	0.410	0.410	0.286	0.285	0.187	0.188	0.146	0.146
Sample Mean	0.434	0.434	0.292	0.292	0.198	0.198	0.148	0.148
Significant Demographics	No	No	Age (-)	Age (-)	No	No	Size (+)	Size (+)

Marginal Effects of logistic regressions reported; N = 378; Standard errors in parentheses; Referent group in brackets

*** p<0.01, ** p<0.05, * p<0.1; Each regression includes controls for age (start year) and size (employee count)

CHAPTER THREE: WHAT'S IN A NAME? DISAMBIGUATING PHILANTHROPIC GRANTMAKERS AND THEIR STRATEGIES

3.1 Introduction

This paper examines the philanthropic strategies of US nonprofit grantmaking organizations. Philanthropy, though inspired from an innate American quality to give back, is encouraged by the tax code that now provides incentives to donate to charitable organizations and create private foundations. Nonprofits are given a reprieve from taxes because they are not driven by profit-maximization, but instead are expected to work for the common good – to be private providers of public goods. They do so through support of scientific research, direct service provision of basic needs, economic and community development, and support of arts and education.

Charitable organizations have been a constant force in the US throughout its history and are continuing to grow in numbers and size: in 2013 there were 1.4 million nonprofit organizations registered with the IRS, consisting of nearly 950,000 public charities, 97,000 private foundations, and 365,000 other types of nonprofit organizations; a growth of 2.7% from 2003 (National Center for Charitable Statistics, 2013a). These organizations accounted for almost 10% of wages and 5.5% of GDP in 2010 (National Center for Charitable Statistics, 2013b). It is also one of the fastest-growing sectors for job growth with an annual increase of 2.1% from 2000 to 2010, even adding jobs during the recession while for-profit firms lost jobs (Salamon, Sokolowski, & Geller, 2012).

Despite its size and importance, organizations within this sector are still developing processes of evaluation with little available data on the frequency with which these organizations evaluate their operations. It is reported that more nonprofit organizations are adding measurement

policies into their operations for internal evaluation (Lumley, 2013), though the type and extent varies. For foundations, estimations of evaluation efforts are low, as evaluation of both internal efforts and external impacts of grants are murky endeavors (Fleishman, 2007; Preston, 2012). Evaluation is made challenging for a variety of reasons: cost, cooperation from organizations, ability to receive accurate information, identification of relevant concepts to quantify, difficulties measuring impact and effectiveness, and lack of valid comparisons (Grant Space, n.d.-b; Preston, 2012). Some watchdog organizations, like Charity Navigator, rely on financial analysis to assess nonprofits, while others like Guidestar, are trying to incorporate impact assessments on an individual level (GuideStar, n.d.-c, n.d.-d; Waide, 2012).

Complicating the evaluation process is the lack of a clear, multi-dimensional classification system of philanthropic organizations. Current classifications of nonprofits group organizations by their IRS tax code, which addresses legal ramifications, or NTEE code, which reports the subject area of focus. With minor exceptions, current approaches do not address an organization's expenditures (Internal Revenue Service, 2011; National Center for Charitable Statistics, n.d.). Further, terms such as nonprofit, foundation, association, endowment, and trust are used interchangeably for organizations that vary by tax and funding structure. For example, the California Community Foundation is registered as a public charity with the IRS, while the Lilly Endowment is as a private foundation. The systematic differences in funding approaches also crossover these terms and funding distinctions: The Cystic Fibrosis Foundation, which has a group classification with the IRS, has an aggressive, focused, and risk tolerant funding strategy, while the Bill and Melinda Gates Foundation, an appropriately named private foundation, runs closely managed and evaluated programs in multiple fields, and the Bank of America Charitable Foundation, a private corporate foundation provides loans, investments, and donations at the local level to promote community

development (Bank of America, n.d.; Bill and Melinda Gates Foundation, n.d.; Feldman & Graddy-Reed, 2014).

The overlapping characteristics in current categorizations highlight the need for a more descriptive classification system that can uniquely group organizations by meaningful distinctions. This paper addresses this deficit by developing a classification scheme of nonprofit grantmaking organizations based on both how they receive and spend money. Using data from charity watchdog organizations and the IRS Forms 990 and 990-PF, the classification scheme is vetted against descriptive characteristics and grant-making behavior to assess what qualities distinguish these categories.

This paper proceeds with Section 2, which reviews the growth of strategic philanthropy and efforts to evaluate these organizations. Section 3 describes the existing classification models and puts forth a new classification system of grantmaking charitable organizations based on how they receive and spend money. The research design and methods for testing the model are presented in Section 4 and the data and sample are discussed in Section 5. Results are presented in Section 6 and discussed in Section 7.

3.2 The State of American Philanthropy

3.2.1 A Reappearing Act: Strategic Grantmaking in American Philanthropy

An American Quality to Give, and Other Motivations

As de Tocqueville highlights in 1835, there is a cultural tradition and expectation among Americans to give. This quality has been commonly cited as the foundation to the US's strong third sector of nonprofit charitable organizations and private philanthropic foundations (Acs & Phillips, 2002; Salamon, 2002). While altruism is often cited as the primary reason for giving, there are other motivations behind it. Large private foundations yield political and economic power (Boulding,

1962). Individuals, as a result, are also driven by the desire for social capital – prestige and respect (Olson, 1965), or to fight negative perceptions (Becker, 1974). Philanthropists shape social change by working as elites after gaining credibility in the private sector (Bartley, 2007). Carnegie, Rockefeller, and Mellon each maintained control as they used their wealth to benefit society, expanding their own social capital in the process (Harvey, Maclean, Gordon, & Shaw, 2011). Following empirical results that show the limitations of the pure altruistic model (Andreoni, 1988; Bernheim, 1986; Roberts, 1984; Warr, 1982), Andreoni (1990) developed a model of impure altruism better matched to observed philanthropy that accounts for these public and private motivations to give (Andreoni, 1990).

Strategic Giving, Again

These differing motivations may lead to different strategies in giving. Andrew Carnegie argued in 1889 in *The Gospel of Wealth* that there is an obligation for the wealthy to improve society with their riches within their lifetime. He along with other tycoons setup massive foundations to distribute their wealth to tackle serious problems and spur innovation that the risk-averse government could not. But other philanthropists created foundations without the same motivation for fundamental change, instead seeing value in keeping a legacy alive. Now, there has been a return to Carnegie's push, to give away wealth now, not to hoard it. The movement is seen through countless examples of America's wealthiest pledging to give away their wealth before the die – Gates, Buffett, and Bloomberg, for example (Barbaro, 2013; Buffett, 2013; Thelin, 2013).

Beyond giving their money away, there is also a strong revival in the practice of thoughtful giving – that philanthropists should give their money wisely, strategically. Since large foundations have the funding to act on a mammoth scale, they could innovate the process of philanthropy itself through strategic giving (Rogers, 2013; Sacks, 1960). Strategic or venture philanthropy grew as a

named concept in the late 1990's with the rise of tech tycoons, following in the footsteps of former business moguls, creating their own philanthropic foundations. The results-oriented funding model they employ aims for their dollars to be investments rather than gifts. They provide administrative support, maintain an active presence with the grantee, evaluate outcomes, and provide follow-on funding (deCourcy Hero, 2001; Fleishman, 2007; Frumkin, 2003; Letts et al., 1997; Wagner, 2002). Many of these strategic foundations are also pushing the boundaries of charitable donations by making investments in for-profit companies, blurring the lines between sectors and paths to social good (Feldman & Graddy-Reed, 2014). Social enterprises are even creating new legal structures that encourage such relationships (Graddy-Reed & Feldman, Forthcoming).

With the tech boom, many of American's most prolific philanthropists became young: in 2012, three of the top five donors were under 40. And with their youth comes a different approach than their parents: young philanthropists are funding research and science, looking for innovative solutions to problems and measuring impact (CNBC, 2013; Preston, 2013). For example, John and Laura Arnold are among the top (young) philanthropists and are motivated to solve problems, not to meet an immediate need (Reagan, 2013). This larger motivation leads them to invest in long-term research projects to find solutions (Reagan, 2013). The Arnold Foundation is afforded the right to be patient in their approach to philanthropy because they are not accountable to the public. As a private foundation they have a luxury forbidden to the government: they can take risks in what they fund, and take their time, not having to worry about the next election cycle. Modern mega-philanthropists are seeing the benefits that the American system provides, and taking advantage.

3.2.2 Evaluating Success in Philanthropy

Ruling Through Regulation

As a result of their tax-exempt status, charitable organizations are subject to regulation and reporting through the IRS. Charitable organizations are required to file a version of the Form 990 annually, which provides details on the organization's revenue sources and expenditures, including their grantmaking activity. These forms are publically available by law. The Form 990 has been a required reporting form for most charitable organizations since 1943. There was a major revision to the document in 2007, which provided much more non-financial information on the form including mission and program activity (Arnsberger, Ludlum, Riley, & Stanton, 2012). Overtime, Congress and the IRS have clarified and revised the restrictions surrounding the behavior of charitable organizations as an effort to regulate them through revisions to the tax code, most significantly from 1909 through 1969.⁵ The Revenue Act of 1950 established the unrelated business income tax for charities. Before then, nonprofits received reprieves from income taxes for both charitable operations and unrelated commercial business. With the Tax Reform Act of 1969, clear rules were established for private foundations, including the minimum payout requirement and an excise tax on net investment income (Arnsberger et al., 2012). Limits on the lobbying and political activity of charities were regulated with the Revenue Act of 1934, Tax Reform Act of 1976, and the Revenue Reconciliation Act of 1993 (Arnsberger et al., 2012).

A Look Within: Internal Evaluation

Many internal and external stakeholders have called on the importance of evaluation of philanthropic foundations and the nonprofit organizations they support. However, there are varying strategies championed by these stakeholders with little common ground or widespread practices in

⁵ See Arnsberger et. al 2008 for detailed listing of tax policies related to charitable organizations

place. The push for foundation's to evaluate their grantmaking, and in conjunction, for charities to evaluate their outcomes has led to a rise in nonprofit's measuring outcomes of their work, with some reporting 75% of charities measure outcomes (Lumley, 2013).

However, institutional and organizational characteristics make defining a clear set of best practices difficult. While for-profit organizations measure success through profits, a nonprofit's desired outcome of accomplishing their mission, is difficult to measure accurately, and nears impossible with more abstract missions (Herman & Renz, 1998; Preston, 2012; Sawhill & Williamson, 2001). In addition, unlike for-profits, nonprofits do not have the same risks of failure. They will not go out of business from bad grantmaking, only from bad investing (Boulding, 1962).

As a result of this challenge, impact evaluation within nonprofits takes a variety of forms (some useful and others not), if it is done at all (Herman & Renz, 1999; Sheehan, 1996). For many with missions associated with high risk and requiring significant innovations, organizations are more likely to evaluate effectiveness through measures of procedures (inputs and processes) rather than outcomes (Herman & Renz, 1998).

Some organizations have implemented multi-level measurements to address separately effectiveness of mission success, goals achieved, and capacity (Sawhill & Williamson, 2001). Organizations succeed at developing these measures when they establish specific criteria that reflects the larger, more abstract mission rather than trying to quantify it directly (Sawhill & Williamson, 2001). Others have struggled with how to separate their impact from overall activity towards their mission. The American Cancer Society avoided this challenge by accepting progress as progress no matter what organization or agency caused it. Instead, they have chosen to focus on using their resources most efficiently based on what actions they know to be effective from previous research (Sawhill & Williamson, 2001), a resource most nonprofits do not have.

Fleishman (2007) points out the lack of information on program failures within private foundations, finding only four foundations in his sample that have ever graded one of their programs as failing and finding RWJF to be the major exception to the lack of public admissions of failure with their public postings of reports on grants completed no matter the result. Since foundations are private entities, they are not required to report on the success or failure of their efforts, raising the growing concern over the lack of accountability and transparency in private foundations. Further, even when organizations engage in evaluation, they often fail to provide sufficient resources to properly evaluate the grantmaking: a 2009 survey of 31 foundations found the median budget for evaluation was 2.2% of their grantmaking budget with 40% spending less than 1% (Preston, 2012).

Some foundations, like the Gates Foundation are vocal supporters of evaluation and work to spread its gospel. The Gates Foundation views evaluation as the optimal tool for improving program effectiveness and defines it as “the systematic and objective assessment of an intervention, project, policy, program or partnership, it is different from monitoring or tracking results because it can tell us what works best to achieve results, how and why they are or are not achieved, and what we can do to improve execution” (Bill and Melinda Gates Foundation, n.d.). But even with such staunch support, they do not use evaluation with all of their investments, only those where they deem it would provide the most value (Bill and Melinda Gates Foundation, n.d.), though it is not clear how that is determined. The vague but strong push from many for evaluation is often of concern for recipients and staff as they do not know how they will be evaluated or the consequences of a poor evaluation (Preston, 2012).

Determined Watchdogs: External Evaluation

In addition to these efforts, there has also been increased support regarding external evaluation – efforts made by watchdog organizations to evaluate the quality of private foundations and the nonprofit organizations that foundations and individual donors both support. But outsiders face similar challenges to evaluating these organizations – in the absence of a clear outcome it is challenging to measure progress towards said outcome and difficult to compare across subjects. As a result, there was a long focus of evaluating nonprofits based on financial indicators, numbers that all nonprofits share. The focal point of these efforts was the ‘overhead’ rate, or the proportion of their expenditures on fundraising and administrative costs. However, there is now a trend to avoid these measures – noting that all organizations need to spend money on these supporting expenditures to be able to provide program related services in the long term (Perry, 2013a, 2013b). Many watchdog organizations are instead trying to refocus evaluation on measures of transparency, governance, leadership, and outcomes (Perry, 2013b), though little guidance is given on how to quantify the latter, leaving evaluation as still heavily process oriented.

The two most prominent watchdog organizations are Guidestar and Charity Navigator.⁶ Guidestar was launched in 1994 by Philanthropic Research to provide the public with access to nonprofit’s tax forms and information regarding their operations (GuideStar, n.d.-a). Guidestar has evolved with the modern push for impact evaluation from donors and expanded their information to include an impact assessment of a growing number of nonprofit organizations (GuideStar, n.d.-c). The assessment includes an impact statement and evidence of an organization’s effectiveness, their organizational strengths, and places for improvement (GuideStar, n.d.-c). However impact

⁶ The Foundation Center and National Center for Charitable Statistics each provide vital data on private foundations and public charities. They each maintain databases detailing organizational, financial, and grant details of nonprofit organizations. While a small portion of each dataset is publicly available, most of the data requires a subscription for a fee. Both databases are meant to serve as a source of information; neither includes any effort to evaluate an organization, however the data would be very useful to many such efforts.

statements are contributed by nonprofits and vary greatly in their content and quality. A subset of nonprofits file a Charting Impact report, which includes five questions: what are your aims, what are your strategies to accomplish these aims, what are your capabilities to do so, how will you know if you have made progress, and what have you accomplished so far (GuideStar, n.d.-b). While Guidestar links effectiveness to mission success they recognize the difficulty in assessing this and defer to expert opinion for their assessments. Experts include foundation professionals, academics, researchers, and senior staff (GuideStar, n.d.-c). However, expert reviews are currently only available on approximately 2,300 organizations and are provided based on those most popular with said experts so there is a bias towards well-regarded organizations.

Guidestar has also introduced 'exchange levels' that serve as certificates of quality to potential donors. The levels are based on meeting certain criteria but are also associated with benefits to participating organizations. A bronze level seal requires an organization to provide basic information to the site such as location, contacts, mission statement, area served, and leadership. A silver level requires access to financial statements while the gold level requires a Charting Impact report and effectiveness information. Benefits to the organization include access to a seal logo to use on the organization's website and discounts to Guidestar products and services (GuideStar, n.d.-d). Given the benefit to organizations for participating in this program there is a bias of inclusion towards organizations that rely on public support who would benefit from a quality distinction signal. Thus private foundations are underrepresented in the population of participants.

Charity Navigator was launched in 2002 to help donors make informed giving decisions by compiling financial details of charities and later their protection of donor's personal information (Charity Navigator, n.d.-b). Charity Navigator (minus a few exceptions) only evaluates public charities, not private foundations. It argues that private foundations are not comparable to public charities because they fill out different versions of the Form 990. However the more likely reasoning

is that Charity Navigator operates to inform potential donors as opposed to evaluate nonprofits. As a result they are not interested in self-supported private foundations.

Charity Navigator stands in contrast to other watchdog organizations by standing by the use of financial measures to evaluate nonprofits. In defense of the numbers, Charity Navigator argues that they inform donors on the financial health of an organization and how responsible they are based on their expenditure proportions, savings, and growth rates (Waide, 2012). Further, they argue that charities share a similar goal in financial terms: to maximize the funds they spend toward their mission by increasing revenues and decreasing other expenditures, thus they can be compared along these lines (Waide, 2012). One metric of note is their financial capacity performance measure, which assesses how a charity's financial capacity is maintained over time – how it fares against economic shocks, to help show donors which charities are more stable providers.

Charity Navigator is, however, moving to be more results-oriented in their evaluation. They are working to introduce a third dimension of evaluation in addition to their financial and accountability measures of results reporting. Results reporting aims at capturing how successful an organization is at reaching their specified goal and how valuable to society that impact is (Charity Navigator, n.d.-a). However, the actual data reporting is still process rather than outcome driven. It will include five elements: alignment of mission with solicitation materials, whether the charity has a reasonable, evidence based link between their strategy and goal, whether charities provide information on their websites about their external rankings, whether the charity uses feedback from constituents, and whether they publish evaluation reports of their activity. Charity Navigator plans to rate 10,000 charities with this method by 2016. (Charity Navigator, n.d.-a). Their efforts are focused on the communication of results opposed to the results themselves. Results reporting will be a useful addition to Charity Navigator's system, while still cautiously avoiding quantifying progress of an organization.

3.3 A Model of Organizational Classification

3.3.1 Existing Classification Systems

There is no widespread clear and concise classification of philanthropic organizations that captures multiple characteristics of the organization. Legal tax code, funding structure, giving-style, and giving-focus each capture an element of a philanthropic venture. Current classification systems are reviewed below and then a new model is put forth.

IRS Classification of Nonprofit Organizations

While there are 31 distinct forms of nonprofit organizations under the IRS code, most people are familiar and concerned with organizations classified as 501(c)(3) organizations. These organizations fall into one of two types: private foundations and public charities. The default is private foundation unless the organization meets criteria to be a public charity (Internal Revenue Service, 2011)

Private foundations are nonprofits with funding usually from an individual, family, or corporation, which manages a grantmaking portfolio to aid some general or specific charitable purpose (Grant Space, n.d.-a). Private foundations are required to meet a “payout requirement” where a minimum of 5% of their assets must be paid out through their charitable activity annually. The vast majority of foundations have payout rates at or very near 5% (Renz, 2012). Private foundations may be operating or non-operating. Non-operating foundations describe the majority of private grantmaking foundations. Operating foundations run their own charitable programs internally and rarely make outside grants. Instead, they meet the payout requirement by funding their own programs. As an alternate IRS classification they are subject to a different set of regulation. To meet their payout requirement, operating foundations must distribute either 85% of

their net income or 4.25% of their assets annually (Internal Revenue Service, 2011). All private foundations are required to file the Form 990-PF annually.

Public charities are nonprofit organizations that receive most of their funding from public donations and grants from private foundations and the government. Public charities may also be grantmaking organization, although they usually work towards a public good through direct services (Grant Space, n.d.-a). Most of these organizations are required to file the Form 990 annually. Public charities may also be further classified with the IRS as a group entity or supporting organization. Group entities can exist under many nonprofit codes, but as public charities, they are central organizations with a group exemption letter, which covers their subordinate units with their tax-deductible status. These organizations with affiliates only file one Form 990 annually to account for all sub-units' activity.

Supporting organizations are public charities that closely resemble private foundations but exclusively fund previously specified public charities. There are three types of supporting organizations: Type 1 are those under the direct control of the supported organization; Type 2 includes organizations under common control with the supported organization; and Type 3, which includes organizations not necessarily related to the supported organization. Supporting organizations must distribute at least 85% of their annual income to their supported charities (Internal Revenue Service, 2011). Figure 3.1 diagrams the IRS classifications of 501(c)(3) nonprofits.

Common Types of 501(c)(3) Nonprofits

There are additional types of 501(c)(3) nonprofits that do not hold distinct IRS classifications, but are unique either from their funding source or funding strategy. These include: community foundations, family foundations, and corporate foundations. Family foundations are private foundation that received their endowment funding from a single family. This family is

typically strongly involved in the grantmaking activities of the foundation and family members often serve on the board or as officers. Corporate foundations are also private foundations but receive their funding from a for-profit company. However, this endowment is independent from the company. Grantmaking activity follows the for-profit company's interests. Community foundations, unlike the name would suggest, are actually registered as public charities with the IRS. They receive funds from multiple donors, which are then held in a common endowment. Grants are made to benefit a specific community or region. Community foundations often receive support from supporting organizations that are setup to specifically fund them.

Figure 3.2 alters Figure 3.1 to include these common types of charitable organizations that do not have unique IRS classifications. As seen from Figure 3.3, the IRS distinctions of these tax-exempt organizations dictate regulation and reporting of these organizations but do not uniquely describe their funding sources and behavior. Figure 3.4 illustrates the overlap between legal structure and grantmaking activity. Public charities and private foundations can be only grantmaking organizations or grantmaking and grant-receiving organizations.

A further complication to the value in the current legal classification system is the lack of value in a name. The word 'foundation' has no legal meaning by itself. So many organizations, and even sets of organizations can be named as a 'foundation' while not necessarily being classified by the IRS as a private foundation. Community foundations, for example, are a set of grantmaking public charities, not private foundations. Likewise, not all private foundations refer to their status in their name (e.g. the Carnegie Corporation of New York). Other words like 'association', 'society', 'trust', and 'endowment' are commonly used across legal status in names of organizations, further complicating the identification process. Figure 3.5 lists a set of examples that shows the range of legal structure, names, and grantmaking behavior crossover.

NCCS NTEE Classification System

In 1987, the National Center for Charitable Statistics (NCCS) developed the National Taxonomy for Exempt Entities (NTEE). The NTEE classification system codified tax-exempt nonprofit organizations in the US around their focus area to provide a better means for describing nonprofits (NCCS). The IRS and NCCS use the system to classify nonprofit organizations by subject area. It is also used by the Foundation Center in their classification of grants and grant recipients from foundation funding (National Center for Charitable Statistics, n.d.). The system was created to help the analysis of nonprofit organizations, given the lack of any classification system beyond IRS legal codes.

The IRS began using the system in the 1990s. The version used by the IRS contains approximately 400 codes within a hierarchical model. The system consists of ten major groups: Arts, Culture, & Humanities, Education, Environment & Animals, Health, Human Services, International & Foreign Affairs, Public, Societal Benefit, Religious, Mutual/Membership Benefit, and Unknown/Unclassified. Within these groups there are 26 major codes illustrated by a letter and then each major code has a series of numeric categories (National Center for Charitable Statistics, n.d.). The NTEE classification system is quite useful in identifying organizations by subject area and can be used in combination with the IRS code to have a broader understanding of a charitable organization. There is little consistency between NTEE codes and IRS legal status. Figure 3.6 updates Figure 3.5 to include NTEE codes to show this variation.

Foundation Center Taxonomy

The Foundation Center has been developing its own classification system, the Philanthropy Classification System, to attempt to deal with these variations. They began redeveloping the system in 2012 to assist in analysis of philanthropic operations. The updated system includes six

components to cover many facets of the philanthropic organization: Population served, Subject area, Organization type, Support strategy, Transaction type, and Geographical area served (Foundation Center, n.d.-a). The Population code consists of approximately 170 options and can be applied to the grantmaker, recipient, and grant to describe who is being supported. The Subject area code contains roughly 690 types to describe the area of focus of the grantmaker, recipient, or grant. There are 80 organization types to be applied to the grantmaker or recipient. Support strategies entail roughly 100 options to be applied to the grantmaker or grant that provides detail on the purpose of the funds, for example if it is a travel award or research grant. There are approximately 50 Transaction type and an endless number of geographical areas at the nation, state, county, and inhabited area levels (Foundation Center, n.d.-a). The benefit to this system is the extreme detail it will provide regarding grantmaking organizations, their recipients, and the individual grants they make. However, the tradeoff to such detail is that it is quite complicated and since most can receive multiple codes there seems to be almost a unique combination for each organization and grant. Further, it does not capture the motivation or strategy behind a grantmaker's portfolio.

3.3.2 A New Model of Classification

This paper puts forth a hypothesized paradigm of philanthropic grantmaking organizations defined by two key characteristics: the funding model employed and mission focus of the organization. It is a system to classify organizations based on how they receive funds and how they spend funds.

The funding model captures tax code regulation, revenue source type, and expenditure requirements. Philanthropic organizations are primarily funded through one of two options: endowment or donation-based. Endowed organizations are initially setup with a large sum of money to be invested so as to produce additional money over time. Grants and expenses are spent

from the endowment each year. Donation-based organizations have little or no endowment. Instead they rely on donations and outside grants to create their revenue, which is then used for operating expenditures, program expenses, and their own grantmaking.

This distinction by funding structure classifies private foundations, including non-operating and operating, as endowed organizations. This includes family and corporate foundations. Donation based organizations are comprised of public charities, which includes group entities. It also includes community foundations. Supporting organizations, although public charities are grouped with endowment-based organizations because their funding comes from a single donor, family, or business and they behave more like a foundation, as discussed previously.

The second classification used in this model is to separate organizations based on their mission focus. Mission focus addresses how organizations give: do they have a specific focus in their mission or do they operate within a general purpose. This captures if organizations are strategic in their giving as more focused organizations are more likely to reach innovative outcomes. As discussed previously, nonprofit organizations often have vague missions due to the large public good problems they are attempting to tackle, making it challenging to evaluate their effectiveness. McDonald (2007) puts forth a model of mission-driven innovation, which argues and shows that nonprofit organizations with clear and explicit mission lead to more innovation by focusing the attention of the organization to accomplishable goals and providing goals that can be evaluated (McDonald, 2007).

Additional literature on mission statements and performance uses content analysis to assess if different words or phrases are associated with organizational performance. Short & Palmer (2007) do so with a sample of business schools and find language around activity and action is positively associated with external rankings (Short & Palmer, 2008). From the for-profit literature, Bartkus & Glassman (2007) find that the use of social issue terms in mission statements, like environment and

diversity, are significantly associated with corresponding behaviors (Bartkus & Glassman, 2007).

While Bart & Laurier (1998) find that mission statements that listed organizational values and purpose had higher firm performance (Bart & Baetz, 1998).

The challenge with using a mission statement to measure strategy is in a smooth assignment process of coding organizations as focused or general in purpose. A classification system is only as valuable as it is usable so it must have an objective coding system so as to be applied broadly. To account for this, a signal variable is coded as focused if nonprofits meet one of three criteria based on the number of fields of interest, types of support provided, and key words in mission statements. Regarding fields, organizations that are only interested in one broad field (e.g. Education or Health) or two subjects (e.g. Cancer Research, Breast Cancer) are coded as focused. This allows for minor flexibility in interest areas but maintains a focus in attention. Organizations are also coded as focused if they provide support for research or program-related investments (PRI). These types of support are included because they are associated with outcome-oriented strategies, especially in comparison to alternative types of support such as building support or capital campaigns.

Finally, nonprofits are also coded as focused if their mission statements contain words related to strategy, collaboration, efficiency, outcome-orientation, or social innovation. (See Appendix Table 3.1 for list of words used). The list of words was chosen based on the key principles surrounding strategic grantmaking articulated previously. Various sets of words were tried in this sampling process and tested on a sample of mission statements for accuracy. In addition, a more restrictive signal variable was also created that omits the criterion regarding types of support. The data were analyzed using this system as well and produced similar results, but were slightly smaller in magnitude. Appendix Table 3.2 shows the distribution between the two systems.

These two classifications, funding structure and mission focus are exogenous to each other, producing four classifications of philanthropic organizations (Figure 3.7). The first category of

strategic or venture foundations are endowed and mission-driven organizations. With endowments, strategic foundations should have little if any other revenue sources funding their operations. Given their mission focus, these foundations should be following venture-like practices and providing larger and longer-term grants with administrative support while also fostering relationships with their grantees (Feldman & Graddy-Reed, 2014; Fleishman, 2007; Letts et al., 1997).

Strategic or venture public charities are also mission-based organizations but are donation-based, meaning they receive most of their revenue from private donations, grants, and fee-for-service programs. Strategic charities are similar to strategic foundations in their high-mission focus, making them likely to exhibit similar grant-making behavior of larger and longer-term grants. However, their less-secure funding structure should affect their giving strategy. Strategic charities should be more likely to incorporate revenue generating streams like royalty stipulations and licensing agreements than their foundation counterparts, which will help improve their own financial security. They should also be more likely to cultivate partnerships between grantees and outside stakeholders to help secure follow-on funding for successful projects (Bercovitz, Feldman, & Graddy-Reed, Working Paper; Feldman & Graddy-Reed, 2014; Ledford, 2011).

Non-strategic public charities are donation-based and have general social aims. They are similarly funded from private donations and grants and program revenues. However, they are not mission focused. Instead they have a set of general aims that motivate their grant-making efforts. This is likely to lead them to be less dynamic in their funding strategy overtime, less likely to be evaluating their impact, and more likely to provide smaller grants across more types of projects and in less goal-oriented areas. Traditional foundations also have general social aims but are endowed. Because they have no revenue pressures and less focus, they are more likely to provide smaller grants in multiple areas and payout a smaller percentage of their endowment each year than their strategic counterparts.

Looking back to the set of example nonprofits, Figure 3.8 updates the set to include their category with this classification system (non-grantmaking organizations are excluded since this system refers only to grantmaking entities). As can be seen from the table, the new classification system crosses over self-identifying terms, IRS legal structure, funding sources, and focus areas to describe nonprofits by their revenues funding structure and expenditure focus.

3.4 Research Design & Methods: Applying & Evaluating the Model

Section three puts forth a classification model of philanthropic organizations based on funding structure and funding strategy, creating four organization types. Following the assignment process, the classification model is vetted to assess what organizational characteristics distinguish categories, and then applied to estimate how organization type affects grantmaking practices.

3.4.1 Vetting the System

In the first part of the analysis, a multinomial logit model is estimated by regressing the categories on a set of organizational and financial characteristics to vet the system by nonprofit i (Equation 4.1). The multinomial logit model assesses probabilities of assignment to the non-ordered categorical outcome of classification category as a function of characteristics of the nonprofit, the decision-maker. The marginal effects of the model do not depend on the other alternatives, assuming the Independence from Irrelevant Alternatives (IIA) holds.⁷ Just as with a binary logit model, marginal effects describe how a change in the decision-maker's characteristics changes the estimated probability of being in a specific category.

$$ClassificationCat_i = \alpha + \beta_1 OrgTraits_i + \beta_2 FinTraits_i + \varepsilon_i \quad (4.1)$$

⁷ The IIA was tested using a Hausman omitting each category and 'passed' on each account, failing to reject the null hypothesis that differences in the coefficient were not systematic.

Nonprofit characteristics include whether the organization provides an impact statement, if they require an application form for potential grants, if they have a single state geographical focus in their giving, if they are members to regional grantmaking associations, or to affinity groups, and if their fields of interest include arts and culture, health or science research, the environment, or health care. The IRS ruling year is also included to capture nonprofit age. Financial characteristics include the nonprofits total revenue and share of expenditures on salaries in the first year of the dataset.

The model is also run on the binary outcome of the financial distinction (donation-based versus endowed) to compare on what characteristics funding source distinguishes nonprofits versus the 2x2 model. For comparison, the same multinomial model is also run using each the Guidestar Exchange Level ranking and the Charity Navigator ranked status as alternate outcomes to assess what organizational variation they capture.

3.4.2 Applying the System

Given that there are meaningful distinctions between these organizations, the next question is how these distinctions affect behavior: *How does a grantmaker's funding source and strategy affect their grantmaking portfolios?* An OLS model is estimated by regressing a series of logged outcome variables on the classification system, lagged time-varying financial statistics, and lagged grantmaking behavior, clustering by the nonprofit (Equation 4.2).

$$\ln(Grant)_{it} = \alpha + \beta_1 Category_i + \beta_2 FinTraits_{it-1} + \beta_3 \ln(Grant)_{it-1} + \varepsilon_{it} \quad (4.2)$$

The outcomes estimated are grouped into two levels of observation: year and grant. At the year level, data are aggregated by nonprofit to their annual total. Models are run using annual logged outcomes of total giving, median grant size, total giving to universities, total giving through socially innovative practices, total giving for research, and total giving for health. Total giving to universities is calculated based on the recipients name including *college* or *university*. Total giving through social

innovation is calculated based on the grant description including *program/mission related investment/loan, micro-credit/enterprise/finance/entrepreneurship, social entrepreneur/enterprise, or social innovation*. Total giving for research is also determined by the grant description including any of a series of words that describe the research process including *research, clinical trial, proof-of-concept, analyze, case study, experiment*, as well as others. Total giving for health is based off of descriptions including any of a series of words related to health care, specific conditions, or diseases (See Appendix Table 3.1 for full list).

At the grant level, the outcome variable is the logged grant size. The model is run on the full sample of grants as well as sub-samples of grants supporting research, arts and culture, the environment, health, health-disease related only, and health-care related only. As in the year level analysis, these fields are based on grant descriptions including sets of words (Appendix 3.1).

Control variables include lagged financial and grantmaking behavior. At the year level analysis, controls include the lagged proportion of grantmaker-recipient state match (how many of the grants went to in-state recipients), lobbying activities, proportion of expenditures to salaries, proportion of expenditures to fundraising, and the outcome. In the grant level analyses, controls also include the lagged lobbying activities, proportion of expenditures to salaries, proportion of expenditures to fundraising, and the outcome. In addition, whether the grant is going in-state is included, as well as the lagged logged average grant size and lagged logged total giving for the outcome area (total giving for full sample, giving to research for research sub-sample). For the full sample, lagged logged giving to research and lagged proportions of giving to universities, schools, and hospitals are each included. The nonprofit's age based on IRS ruling year and lagged assets are controlled for in every model.

Temporal variation is also examined to assess if grantmakers change their strategies in response to economic recession. The analysis is rerun with samples during and post the Great Recession to identify how organizations vary behavior in changing economic conditions. The full

sample includes data from 2007 to 2011. Since the Great Recession began in December of 2007 and ended in June 2009, data from 2008 and 2009 are treated as the recession and 2010 and 2011 are considered post-recession.

As in the first part of the analysis with the multinomial logit model, comparison models are run using the same independent variables but changing the classification system. For the year and grant level analyses, IRS tax status, Guidestar Exchange Level, and Charity Navigator ranked status are used as alternate categorical systems to assess how they explain grantmaking behavior.

3.5 Data

To test and evaluate the hypothesized model of classification, data is compiled from the IRS Form 990 and Form 990-PF. As previously discussed, these forms are required to be completed by foundations and public charities in the US. The data collected from these forms includes general financial information regarding revenue and expenditure streams and detailed information on the grants made by the organization. This data is augmented with descriptive information on the organizations, including age, location, and practices from charity watchdog organizations.

3.5.1 The Sample of Organizations

The sample for analysis consists of 708 foundations and public charities over a five-year period from 2007 to 2011. The compilation of foundations and public charities is not representative of the entire population of foundations or public charities but is skewed to focus on those that are active grantmaking organizations either as major givers, local champions, or dedicated supporters of a specific area. The specific areas highlighted were those that tend to have a mix of research and program support.

The organizations were sampled in part from lists ranking nonprofits by size in various types of giving compiled by the Foundation Center and by using the NCCS database. The Foundation Center ranking lists used to generate the sample were: largest foundations by total assets and total giving, largest family, operating, community, corporate, and independent foundations by total giving, largest foundations in states by total giving, largest foundations by total giving for health, medical research, science and technology, the environment (all for 2011). Organizations were also sampled from those that are NORD member organizations and NIH rare diseases foundations, Faster Cures panelists, Southeast Venture Philanthropy Summit panelists, and Stanford venture philanthropists to capture smaller nonprofits that tout strategic principles. The NCCS database was also sampled to capture large grantmaking public charities (based on size weights), excluding hospitals and schools.

The list of organizations contains 382 private foundations, 18 operating foundations, 48 supporting organization, 13 exempt groups, 243 public charities, and 2 non-exempt charitable trusts. Appendix Table 3.3 shows the proportion distribution of public charities and private foundations in the sample by state and the population distribution by state for active grantmaking public charities and private foundations. The sample is fairly representative of the population distribution with a few exceptions: Illinois, Michigan, North Carolina, and Virginia are over-represented while Florida, Pennsylvania, and Wisconsin are under-represented.

The time period selected was the most recent and complete five-year period available for the nonprofit's Form 990s: 2007 to 2011. This time period is of note because in the middle of the panel is the economic recession of 2008-2009. The Great Recession impacted foundations and public charities by decreasing the value of their endowments and reducing donation levels. Thus data from those years are not representative of funding levels in stronger economic times. However, it does provide the ability to analyze the effect of the crash on the allocation of funding, and the behavior of these organization in a recovery period.

Although the Bill and Melinda Gates Foundation is the largest funder of philanthropy, it was omitted from this analysis because it is an outlier: with assets of \$34,640,122,644 and total giving of \$3,239,412,884 in 2011, the next largest foundations, respectively in the US reported assets of \$10,984,721,000 and total giving of \$487,795,351 for the same year (Foundation Center). Their strategies and behavior would overwhelm and skew the data.

3.5.2 Data Collection Process

This dataset consists of three parts: grant, financial, and organizational detail data. The grant data consists of each grant a foundation or public charity made in a given year for any specified amount of at least \$4,000. The data includes the recipient, recipient's location, amount of the grant, and brief description. The data were purchased from a private company (Metasoft) that pulls off this information from the Form 990 and Form 990-PFs. It provided data on 957,944 grants made by the 708 foundations and public charities from 2007 to 2011 in 46 states. Coding was run on the recipient names and grant descriptions to create variables based on recipient type and grant subjects. Variable were also created using the grant data regarding total giving by nonprofit and year across various recipient types and subject areas.

The financial detail data was pulled from the Form 990 and Form 990-PFs. For 291 organizations the data was accessed with the NCCS database and for 340 organizations it was pulled by hand with the help of research assistants. It provides yearly values for each nonprofit of their revenue, in detail, expenditures, in detail, and net assets.

Organizational detail data was also pulled from the IRS, the Foundation Center, NCCS, Guidestar, and Charity Navigator. Data include IRS tax status, grantmaker type, founder type, age by IRS ruling year, mission statement, fields of interest for grantmaking, geographical focus, types of

support, application requirements, philanthropic memberships, and impact statement. Ratings were pulled from watchdog organizations Guidestar and Charity Navigator.

3.5.3 Descriptive Statistics

Summary statistics are discussed at the nonprofit and grant level across the full sample and by classification category. Table 3.1 presents the summary statistics at the nonprofit level. While each of the categories has a similar average spent on program-related expenditures (85-86%), there are important distinctions in size. Donation-based and Endowed Focused organizations are larger than their broader counterparts in terms of total revenue and assets. However, there is revenue-source based variation in the number of employees: Donation-based organizations have substantially larger staffs on average than the endowed nonprofits. Regarding grant-making practices, broad organizations had higher rates of giving only to pre-selected organizations (34% of Endowed Broad entities and 18% of Donation-based Broad) compared to focused nonprofits (16% of Endowed Focused and 7% of Donation-based Focused). In addition, Donation-based Focused organizations are the most likely to have program-related conference expenditures. As discussed in the presentation of the classification model, it is expected that these organizations would be more likely to have such expenditures so they can cultivate partnerships that help secure additional external funding for their efforts.

Table 3.2 provides descriptive statistics by category at the grant level. Endowed and Donation-based Focused organizations had the highest levels of total giving while Donation-based Focused organizations had the lowest average grant size (and Endowed Focused had the highest). Focused organization, both Endowed and Donation-based contributed more to research as a proportion of total giving than their broader counterparts. Regarding location, there is a revenue-source distinction on the prevalence of in-state giving: Donation-based organizations made 53-56%

of their grants to in-state recipients while Endowed organizations made 31-37% of their grants to in-state. Endowed Broad organizations had the highest rates of giving to arts and culture and social services, both in terms of number of grants and total giving. Across all categories, total giving relative to number of grants was smallest in the categories of religion and social services and highest in health and agriculture and the environment.

Comparison Across Category

Given the multiple options for classifying grantmakers it is of interest not just how organizations vary across this classification scheme but also how this approach matches to other options. Table 3.3 shows the distribution of nonprofits and grants across the classification system and other distinctions (IRS, Guidestar, and Charity Navigator) used for comparison in the analysis. Within the classification system, Donation-based Focused organizations represent 34% of grants but only 22% of organizations while Endowed Broad nonprofits consist of 33% of the sample organizations but only 20% of the grants. Regarding IRS tax status, public charities make up 34% of the sample organizations and 46% of the grants while supporting organizations consist of 7% of the sample but only 1% of grants. For Guidestar participants, Gold status members make up 5% of the sample by only 3% of the grants while Silver members consist of 23% of sample and 38% of the grants. Organizations not eligible to be ranked by Charity Navigator (mostly due to their organizational type) are evenly represented controlling 68% of organizations and 67% of grants.

Regarding the overlap of systems, Table 3.4 provides the distribution of IRS status, Guidestar ranking, and Charity Navigator status by classification categories as well as their availability of certain information through Guidestar. In terms of IRS status, group entities make up a larger proportion of focused donation-based organizations than broad while supporting organizations represent a larger share of broad endowed nonprofits than focused. Guidestar

rankings and information are heavily tied to revenue-source. While all donation-based organizations listed their mission statements with Guidestar, only 13-24% of Endowed organizations did so. However, Focused organizations, both Donation-based and Endowed, had the highest rates external assessments provided, signaling their popularity within the nonprofit community. Charity Navigator status also closely follows legal structure with endowed organizations mostly not eligible to be ranked. However, Donation-based Focused organizations are ranked at a higher rate than their Broad counterpart. For those not eligible to be ranked, Endowed organizations are almost entirely not eligible because Charity Navigator does not rank private foundations. For Donation-based nonprofits, most are not eligible because Charity Navigator has suspended their ranking of community foundations. However, 13% of Broad Donation-based organizations are ineligible because they have nontrivial fundraising expenditures, compared to only 4% of Focused Donation-based organizations, pointing to a greater efficiency within Focused nonprofits.

3.6 Results

Results are presented below on the vetting of the system with the multinomial model and application of the system with the grantmaking behavior models at the year and grant level. Grantmaking results are presented for the overall sample, recession period, and post-recession period. Comparison results for each of the three parts by alternate categories are presented and discussed in the Appendix in tables 3.4-3.6.

3.6.1 Vetting the System: Multinomial Logit Results

Table 3.5 presents the marginal effects from the multinomial logit model by classification category as well as financial distinction of donation-based as compared to endowed. The marginal effects by category are in reference to changes in the estimated probability of being in that category

as compared to not. Regarding the role of revenue source, both requiring an application form and having a single state geographical focus is associated with an increase in the probability of being donation-based while it decreases the probability of each of the endowed category probabilities. However it only increases the probabilities of being a Focused Donation-based organization.

Membership plays a role depending on the type of organization. Regional association memberships are associated with a decrease in the probability of being a Donation-based Focused nonprofit but an increase in the probability of being an Endowed Focused organization. Alternately, affinity group memberships tied to fields and focus areas increase the probability of being a Focused Donation-based nonprofit and decrease the probability of being a Broad Donation-based entity.

In terms of specific subject areas, support to arts and culture increases the probability of being a Broad Endowed entity and decreases the probability of being an Endowed Focused nonprofit. While Donation-based Focused organizations have a significant association with environmental support. Salary share has no significant effect on the probability any category or revenue-source distinction.

3.6.2 Applying the System: OLS Results, Year-Level

Tables 3.6, 3.7, and 3.8 present the results from the OLS estimations of grantmaking behavior at the annual level for the overall sample, recession, and post-recession time periods, respectively. Across the time period, being a Broad Donation-based organization, as compared to a Focused Donation-based nonprofit, is associated with decreases in total giving, giving to universities, giving through social innovation, and giving for research. While the decrease in total giving is associated with an approximately 12% change on average, the decrease in research giving is approximately 115%, holding all else constant. Endowed Focused organizations are associated with a larger median grant size as compared to Donation-based Focused organizations but have no other

statistically significant differences. Endowed Broad nonprofits, as compared to Donation-based Focused organizations, are associated with decreases in total giving, giving to universities, giving through social innovation, and giving for research but they are associated with an increase in median grant size signaling that endowed organizations are providing larger grants, on average. Also of note, regarding other characteristics, having lobbying activities, as compared to not, in the previous year is associated with an increase in giving for research.

Turning to the recession, the restricted sample of 2008-2009 provides similar results. Endowed organizations (both Focused and Broad) are associated with higher median grant sizes, while being an Endowed Broad organization is associated with decreases in total giving, giving to universities, through social innovation, and for research. However, being a Broad as compared to Focused Donation-based nonprofit is associated only with decreases in giving to universities and for research, holding all else constant. Also, during the recession, the lagged proportion of in-state recipients has a positive association with giving to health related activities.

Post-recession, many of the differences across classification category are dampened. Broad as compared to Focused Donation-based entities are associated with decreases in giving to universities and through social innovation but no longer to research. Endowed Broad organizations are only associated with decreases in giving through social innovation, while Endowed nonprofits still exhibit higher median grants, on average. The differences point to the greater stability within Focused Donation-based organizations compared to Broad nonprofits during the recession but more equity across type in more stable times. It also indicates that Donation-based Focused nonprofits give more than Broad nonprofits through social innovation consistently. The lack of significant differences between Donation-based and Endowed Focused organizations across samples may signal their similarity in giving approach.

3.6.3 Applying the System: OLS Results, Grant-Level

Tables 3.9, 3.10, and 3.11 present the results from the OLS estimations of grantmaking behavior at the grant level for the overall sample, recession, and post-recession time periods, respectively. Turning to the overall results, grant-level analysis supports results from the annual-level analysis regarding grant size. Endowed Focused nonprofits compared to Donation-based Focused entities are associated with larger grant sizes, on average, across all funding areas, grants for research, the environment, and health by a magnitude of approximately 52-65%. Endowed Broad organizations are associated with higher grant amounts in the areas of arts and culture and health care as compared to Donation-based Focused organizations. Within Donation-based organizations, Broad entities are associated with decreases in grant size in support of research and the environment by approximately 37% and 34%, respectively, but increases in grant size for health care related funding. Holding the classification category constant, in-state recipients received higher grants on average.

The recession sub-sample shows very similar results to the overall sample. Endowed Focused nonprofits still exhibited higher grants on average, compared to Donation-based Focused organizations across all areas, the environment, and health disease related funding but no longer in terms of research or health care. Endowed Broad organizations are still associated with higher grant sizes in the arts and culture and health care but also the environment. Broad Donation-based nonprofits exhibit the same pattern as the overall sample with decreases in grant size for research and the environment but increases in health care grants, compared to Focused Donation-based entities, on average. In-state recipients are also still associated with higher grant sizes, on average, holding classification category constant.

In the post-recession sub-sample, many results are consistent to recession estimates. Broad Donation-based nonprofits, as compared to Focused, are associated with decreases in grant size for

research and the environment and increases for health care. However they are also associated with decreases in health disease related funding. Endowed Focused organizations still have higher grant sizes overall, for research and the environment but now also for health care. However they no longer have statistically significant higher grant sizes for health-disease related funding than Donation-based Focused nonprofits. Post-recession, Broad Endowed organizations exhibit higher grants than Donation-Based Focused nonprofits, on average, overall, for arts and culture, and health care. Across all three samples, in-state recipients have increased grant sizes across all funding, arts and culture, and health, but never significant differences for research. The similarities across temporal sub-samples point to consistency in differences in grant sizes between categories, in spite of economic shocks.

3.7 Discussion

The classification model put forth here argues that nonprofit organizations vary by their funding source and funding strategies. Results from vetting this system against organizational characteristics find differences in factors that affect distinction by funding source and strategy. Regarding funding source, application requirement and geographical focus are associated with distinctions between donation-based and endowed organizations. In terms of funding strategies, focused organizations are associated with membership to affinity groups and supporting environmental causes while organizations that support the arts are more likely to have a broad approach.

The categories of organizations behave differently in terms of their grantmaking portfolios. Regarding total giving, both during the recession and post, there were no statistically significant differences between Endowed and Donation-based Focused organizations. However, while Broad organizations, both Endowed and Donation-based had lower total giving to universities and for

research than Donation-based Focused organizations during the recession, only Donation-based Broad nonprofits had statistically significant lower total giving to universities compared to Donation-based Focused nonprofits post-recession. After the recession, when the economy was recovering Broad Endowed organizations picked up their total giving levels to be more on par with Donation-based Focused entities, indicating that Focused Donation-based nonprofits were better prepared for the recession to maintain their total giving.

Grant size tells a different story. Both during the recession and post, Endowed Focused nonprofits had larger grant sizes than Donation-based Focused nonprofits in terms of overall funding and funding to the environment. Post recession, Endowed Focused organizations also had higher grant sizes for research and health care related projects than Donation-based Focused nonprofits. While there is no significant difference in terms of total giving, during recession or recovery between Endowed and Donation-based Focused nonprofits, Endowed Focused entities do consistently provide larger grants in key fields.

Meanwhile, Broad organizations had larger grants than Donation-based Focused nonprofits to health care both during and after the recession. Endowed Broad organizations also had larger grants to the arts and culture in both time periods while Donation-based Broad organizations had smaller grants compared to Donation-based Focused nonprofits in the areas of research and the environment during the recession and recovery, as well as in health disease related work in the post period. So Broad Donation-based organizations has lower total giving and smaller grant sizes in key subject areas, namely research, than Focused Donation-based nonprofits. Whereas, Endowed Broad organizations had less total giving during the recession overall and for research, and consistently provide larger grants to the arts and health care than Focused Donation-based organizations.

Grantmaking Strategies in Practice, Sometimes

This model of classification and significant differences in grantmaking practices raises important implications. Given the goal of nonprofits to provide for the public good, focused organizations appear to be doing more in terms of total giving to grantmaking compared to broad purpose organizations. They are putting more dollars in circulation. This is especially key during an economic recession. The result is most surprising for Donation-based focused organizations, which were hit by lower levels of revenue during the recession and should have shown to be more responsive in total giving compared to Endowed organizations. The decreases in Broad Endowed organizations point to both Donation-based Focused nonprofits as being more prepared and even dedicated to their constituents' needs. The implication that grant size was maintained between recession and recovery but total giving changed is important to understanding the grantmaking strategy of maintaining grant 'quality', as measured by size, to fewer number of grants when constrained as opposed to providing less to a similar number of recipients.

The result on grant size highlight another key aspect to grantmaking strategies and an important distinction touted by strategic grantmakers: sufficient funding. Donation-based focused organizations made consistently smaller grants than their Endowed Focused counterparts in key fields, like research. Smaller grants may not be as effective as larger ones, hindering the goals of donation-based organizations. Donation-based focused nonprofits did provide consistently larger grants than their broad counterpart in key fields of research, the environment, and health disease work, pointing to their success in comparison to broader organizations of similar revenue source. While Endowed Broad organization had larger grants on average than Donation-based Focused, they were in areas of the arts and health care as opposed to areas more often associated with problem-solving like research, health disease, and the environment. However, this distinction raises questions over where money should go. While a Donation-based Focused nonprofit may tout its

large overall support of disease research, if they are doing so with many small grants to competing researchers they may be less effective at reaching an important goal than an Endowed Broad nonprofit that provides a large service provision grant for health care that will immediately treat a problem. While we can all agree it is better to effectively solve a problem than ineffectively treat it, it is not as clear that ineffectively trying to solve a problem is a better approach than effectively temporarily treating it.

A Push for Evaluation, Again

Policymakers need to recognize that private foundations and public charities are both publicly subsidized entities and thus we cannot just monitor public charities. We need to be more aware of how private foundations are operating financially and with their grantmaking and how their efforts compare across organizational structure. To do so, we need to be a real emphasis on evaluation of outcomes, not just dollars out but results realized. While many organizations, especially ones operating under strategic principles, tout the value of evaluation, few are practicing what they preach: in this sample only 77 of over 950,000 grants included evaluation related words in the description of activity, highlighting again that while organizations are hyping evaluation, few are supporting it.

Watchdog organizations like Charity Navigator and Guidestar are trying to move towards more outcome-based evaluation methods but these efforts require buy-in from the nonprofits and financial support. As the charitable deduction often reappears in budgeting debates in Washington, we need to address outcome assessment within nonprofits to really understand what are effective policies in support of nonprofit public good provision and what are effective strategies by nonprofits as public good providers. There is no doubt nonprofits are providing for the public good in ways the government cannot feasibly do so, but we need to understand how these

nonprofits can be more effective at it. Given that the Federal government subsidizes nonprofit public good provision, it needs to step up and evaluate that policy. This paper contributes to the literature by putting forth a useful and straightforward classification scheme that categorizes nonprofits across two key dimensions that can be used as a foundation to account for the limitations and needs of different organizational types when evaluating their programs.

Figures

Figure 3.1 – Diagram of IRS 501(c)3 Classifications

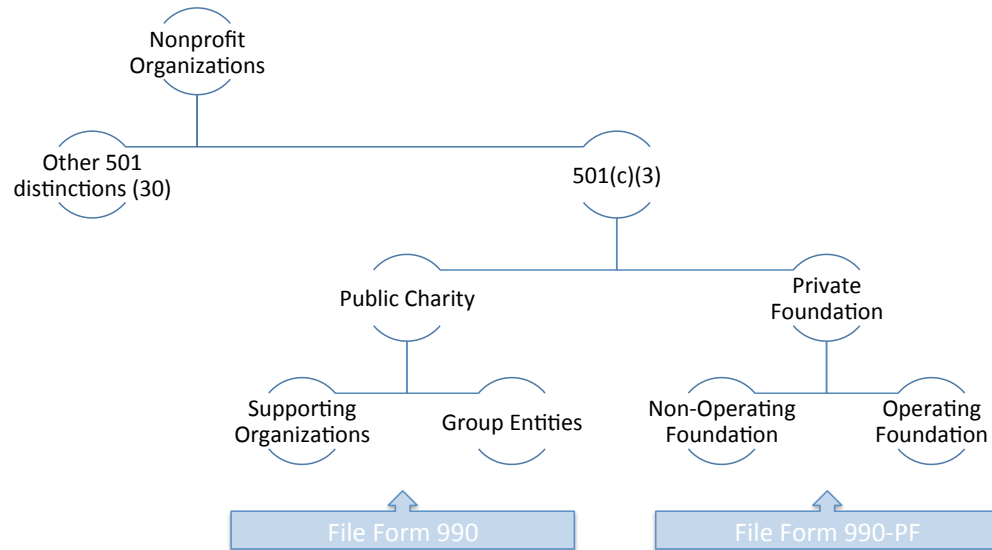


Figure 3.2 – Diagram Adjusted for Common Types

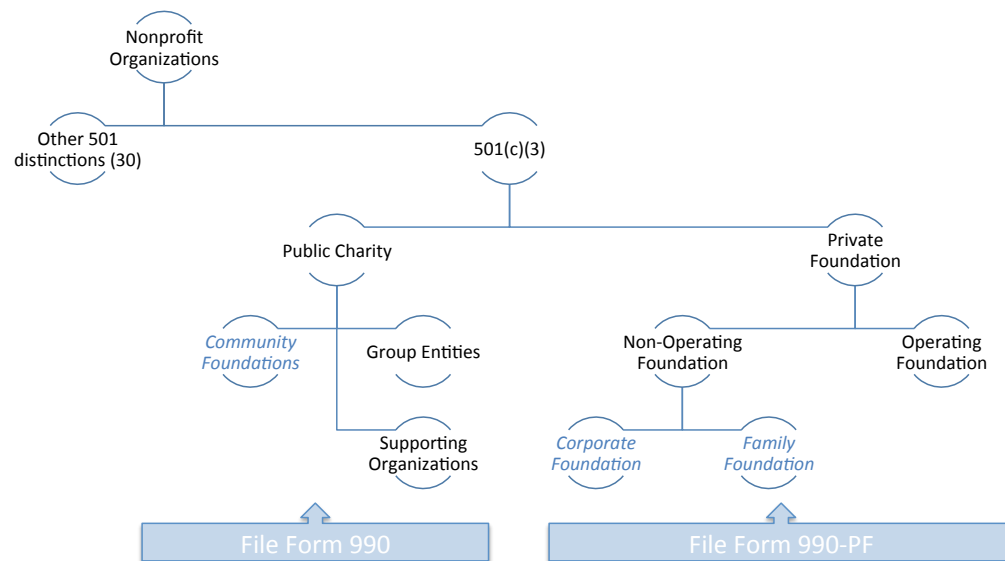
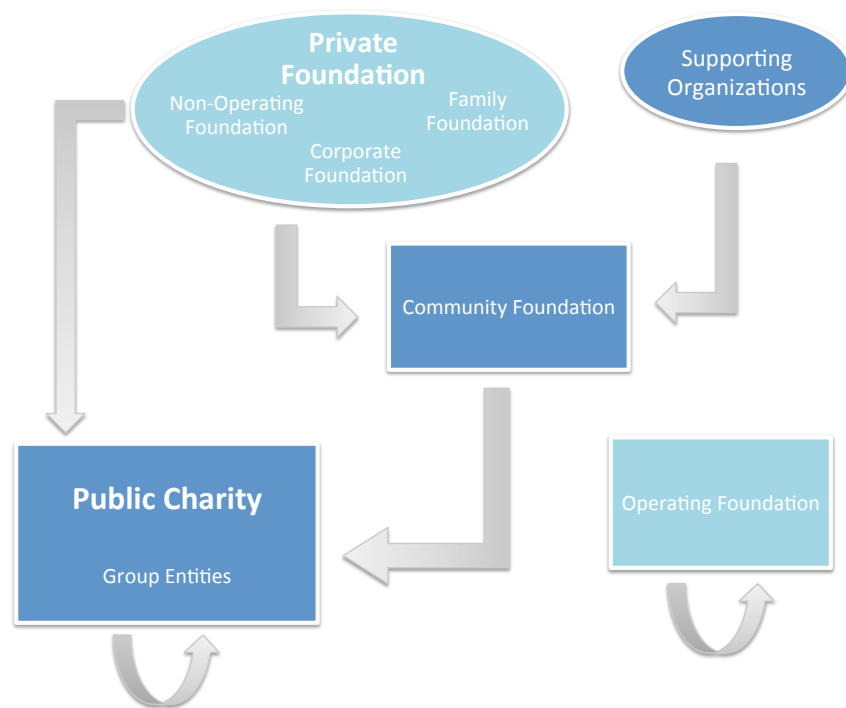


Figure 3.3 – Table of Distinctions by IRS Classification & Common Types

IRS & Common Type Distinctions							
IRS Code	Type	Deductable Limit	Form	Funding Source(s)	Grantmaking Status	Grantmaking Focus	Grantmaking Requirements
PC	Public Charity	50%	Form 990	General public donors; foundation & government grants	May be grantmaking	Varies by organization's focus	None
PC	Community Foundation	50%	Form 990	General public donors; foundation & government grants	Grantmaking	Community or Regional Focus	None
GROUP	Group Entity	50%	Form 990	General public donors; foundation & government grants	May be grantmaking	Varies by organization's focus	None
SOUNK	Supporting Organization	50%	Form 990	Small group/individual donor(s)	May be grantmaking	Fund specific & previously specified public charities	Distribute at least 85% of annual income to supported charities
SO	Type I, II, or functionally integrated type III supporting organization	50%	Form 990	Small group/individual donor(s)	May be grantmaking	Fund specific & previously specified public charities	Distribute at least 85% of annual income to supported charities
SONFI	Non-functionally integrated type III supporting organization	50%	Form 990	Small group/individual donor(s)	May be grantmaking	Fund specific & previously specified public charities	Distribute at least 85% of annual income to supported charities
PF	Private Foundation	30%	Form 990-PF	Small group/individual donor(s)	Grantmaking	Varies by organization's focus	Distribute 5% of assets annually
PF	Company-Sponsored/Corporate Foundation	30%	Form 990-PF	For-profit company	Grantmaking	Varies by company's focus	Distribute 5% of assets annually
PF	Family Foundation	30%	Form 990-PF	Family	Grantmaking	Varies by family's interest	Distribute 5% of assets annually
POF	Private Operating Foundation	50%	Form 990-PF	Small group/individual donor(s)	Grantmaking (Primarily to self)	Varies by organization's focus	Distribute either 85% of net income or 4.25% of assets annually

Figure 3.4 – Relationships between Grantmakers & Grant-Recipients



Key:
Public Charities = Dark Blue;
Private Foundations = Light Blue
Grant Recipients = Rectangles

Figure 3.5 – Table of Variation Examples

Organization	Name Term	IRS Code	General Type	Grantmaking
Maine Parent Teacher Association Inc.	Association	GROUP	Charity	N
Cystic Fibrosis Foundation Headquarters	Foundation	GROUP	Charity	Y
American Cancer Society Inc.	Society	GROUP	Charity	Y
Salem Childrens Trust	Trust	GROUP	Charity	N
Muscular Dystrophy Association	Association	PC	Charity	Y
California Community Foundation	Foundation	PC	Community Foundation	Y
Thomaston Historical Society	Society	PC	Charity	N
Hirundo Wildlife Trust	Trust	PC	Charity	N
Ralph Waldo Emerson Memorial Association	Association	PF	Foundation	Y
Lilly Endowment Inc.	Endowment	PF	Family Foundation	Y
Bank of America Charitable Foundation Inc.	Foundation	PF	Corporate Foundation	Y
Coburn Charitable Society	Society	PF	Foundation	Y
American Conservation Association Inc.	Association	POF	Foundation	Y
Lilly Cares Foundation Inc.	Foundation	POF	Corporate Foundation	Y
Fragment Society	Society	POF	Foundation	N
J Henry Hanhisalo Charitable Trust	Trust	POF	Foundation	Y
Danish Association	Association	SO	Charity	N
Chamber Music Houston Endowment	Endowment	SO	Charity	N
Abam Foundation	Foundation	SO	Charity	N
Ralph McClellan Charitable Trust	Trust	SO	Charity	N
Science Spectrum Talkington Endowment	Endowment	SONFI	Charity	N
John Kazanjian Family Foundation	Foundation	SONFI	Charity	Y
American Fisheries Society	Society	SONFI	Charity	N
The Hubbard Trust	Trust	SONFI	Charity	Y
The Gill St. Bernard Parents Association Inc.	Association	SOUNK	Charity	N
Cystic Fibrosis Foundation Therapeutics Inc.	Foundation	SOUNK	Charity	Y
American Fine Arts Society	Society	SOUNK	Charity	N
John L Brandegee Trust	Trust	SOUNK	Charity	Y

Figure 3.6 – Table of Variation Examples with NTEE Codes

Organization	IRS Code	General Type	Grantmaking	NTEE Code
Chamber Music Houston Endowment	SO	Charity	N	A11 - Single Organization Support
Danish Association	SO	Charity	N	A23 - Cultural & Ethnic Awareness
American Fine Arts Society	SOUNK	Charity	N	A40 - Visual Arts
Ralph Waldo Emerson Memorial Association	PF	Foundation	Y	A80 - Historical Organizations
Thomaston Historical Society	PC	Charity	N	A82 - Historical Societies & Historic Preservation
J Henry Hanhialo Charitable Trust	POF	Foundation	Y	A99 - Arts, Culture & Humanities N.E.C.
Ralph McClellan Charitable Trust	SO	Charity	N	B11 - Single Organization Support
The Gill St. Bernard Parents Association Inc.	SOUNK	Charity	N	B11 - Single Organization Support
John Kazanjian Family Foundation	SONFI	Charity	Y	B19 - Support
Maine Parent Teacher Association Inc.	GROUP	Charity	N	B94 - Parent & Teacher Groups
American Conservation Association Inc.	POF	Foundation	Y	C30 - Natural Resources Conservation & Protection
Hirundo Wildlife Trust	PC	Charity	N	D34 - Wildlife Sanctuaries
Cystic Fibrosis Foundation Headquarters	GROUP	Charity	Y	G20 - Birth Defects & Genetic Diseases
American Cancer Society Inc.	GROUP	Charity	Y	G30 - Cancer
Muscular Dystrophy Association	PC	Charity	Y	G50 - Nerve, Muscle, & Bone Disease
Adam Foundation	SO	Charity	N	G99 - Voluntary Health Associations & Medical Disciplines
Cystic Fibrosis Foundation Therapeutics Inc.	SOUNK	Charity	Y	H20 Birth Defects & Genetic Diseases Research
American Fisheries Society	SONFI	Charity	N	N0361 - Recreation & Sports
Lilly Cares Foundation Inc.	POF	Corporate Foundation	Y	P99 - Human Services N.E.C.
Coburn Charitable Society	PF	Foundation	Y	T0320 - Philanthropy, Voluntarism & Grantmaking
Lilly Endowment Inc.	PF	Family Foundation	Y	T20 - Private Grantmaking Foundations
Bank of America Charitable Foundation Inc.	PF	Corporate Foundation	Y	T20 - Private Grantmaking Foundations
John L Brandegee Trust	SOUNK	Charity	Y	T20 Private Grantmaking Foundations
The Hubbard Trust	SONFI	Charity	Y	T22 - Private Independent Foundations
Fragment Society	POF	Foundation	N	T23 - Private Operating Foundations
Salem Childrens Trust	GROUP	Charity	N	T30 - Public Foundations
California Community Foundation	PC	Community Foundation	Y	T31 - Community Foundations
Science Spectrum Talkington Endowment	SONFI	Charity	N	V30 - Interdisciplinary Research

Figure 3.7: Organization Classifications by Funding Structure and Mission Focus

	Endowed	Donation-Based
Mission Focused	Strategic Foundations	Strategic Charities
General Purpose	Traditional Foundations	Broad Charities

Figure 3.8 – Table of Variations updated to New Classification System

Organization	Name Term	IRS Code	General Type	NTEE Code	New Classification
California Community Foundation	Foundation	PC	Community Foundation	T31 - Community Foundations	Broad Charity
American Cancer Society Inc.	Society	GROUP	Charity	G30 - Cancer	Strategic Charity
Cystic Fibrosis Foundation Headquarters	Foundation	GROUP	Charity	G20 - Birth Defects & Genetic Diseases	Strategic Charity
Muscular Dystrophy Association	Association	PC	Charity	G50 - Nerve, Muscle, & Bone Disease	Strategic Charity
American Conservation Association Inc.	Association	POF	Foundation	C30 - Natural Resources Conservation & Protection	Strategic Foundation
Cystic Fibrosis Foundation Therapeutics Inc.	Foundation	SOUNK	Charity	H20 Birth Defects & Genetic Diseases Research	Strategic Foundation
John L Brandegee Trust	Trust	SOUNK	Charity	T20 Private Grantmaking Foundations	Strategic Foundation
Lilly Cares Foundation Inc.	Foundation	POF	Corporate Foundation	P99 - Human Services N.E.C.	Strategic Foundation
The Hubbard Trust	Trust	SONFI	Charity	T22 - Private Independent Foundations	Strategic Foundation
Coburn Charitable Society	Society	PF	Foundation	T0320 - Philanthropy, Voluntarism & Grantmaking	Traditional Foundation
J Henry Hanhisaio Charitable Trust	Trust	POF	Foundation	A99 - Arts, Culture & Humanities N.E.C.	Traditional Foundation
John Kazanjian Family Foundation	Foundation	SONFI	Charity	B19 - Support	Traditional Foundation
Ralph Waldo Emerson Memorial Association	Association	PF	Foundation	A80 - Historical Organizations	Traditional Foundation
Bank of America Charitable Foundation Inc.	Foundation	PF	Corporate Foundation	T20 - Private Grantmaking Foundations	Traditional Foundation
Lilly Endowment Inc.	Endowment	PF	Family Foundation	T20 - Private Grantmaking Foundations	Traditional Foundation

Tables

Table 3.1 Summary Statistics – Nonprofit Level

Variable	(1) Full Sample	(2) Donation Focused	(3) Donation Broad	(4) Endowed Focused	(5) Endowed Broad
IRS Ruling Year	1979.7 (20.66)	1976.3 (19.81)	1975.1 (19.00)	1977.4 (22.62)	1984.2 (18.59)
Total Revenue	106,890,339.1 (442881389.7)	171,766,647.7 (754108406.3)	110,993,602.3 (224940956.4)	123,724,014.2 (416374927.1)	60,218,503.4 (260144278.8)
Total Assets	394,550,141.2 (1.16681e+09)	441,584,379.7 (1.63247e+09)	244,594,644.6 (590550777.4)	733,363,004.9 (1.54933e+09)	200,143,654.5 (463928404.6)
Program Expenditure Share	0.859	0.856	0.865	0.869	0.850
Administrative Expenditure Share	0.0987	0.0917	0.0865	0.129	0.142
Fundraising Expenditure Share	0.0423	0.0523	0.0481	0.00209	0.00750
Program-Related Conference Expenses	0.585	0.759	0.582	0.286	0.105
Number of Employees	170.6 (1204.4)	268.7 (1727.6)	125.8 (374.2)	3.857 (5.433)	8.553 (40.05)
Number of Voting Board Members	20.86 (21.48)	23.50 (21.19)	23.80 (23.94)	10.43 (6.489)	8.447 (12.26)
Application Form Required	0.443	0.752	0.624	0.386	0.248
Contributes only to pre-selected organizations	0.217	0.0671	0.176	0.158	0.336
Membership: Regional	0.687	0.579	0.583	0.808	0.726
Membership: Affinity	0.719	0.850	0.597	0.760	0.584
Membership: Philanthropic Associations	0.678	0.767	0.736	0.726	0.478
Number of Fields of Interests	13.68 (11.40)	14.58 (13.71)	12.26 (6.995)	13.13 (11.76)	14.06 (7.941)
Number of Broad Subjects	5.430 (2.825)	5.703 (3.553)	6.333 (2.204)	4.832 (2.620)	5.580 (1.744)
Geographic Focus: International	0.139	0.205	0.156	0.188	0.0633
Geographic Focus: National	0.243	0.295	0.292	0.326	0.140
Org Type: Celebrity Founders	0.167	0.0915	0.0297	0.339	0.145
Observations	708	153	103	186	235

Mean (Standard Deviation) or Proportion reported; Nonprofit-Level data

Table 3.2 Summary Statistics – Grant Level

Variable	(1) Full Sample	(2) Donation Focused	(3) Donation Broad	(4) Endowed Focused	(5) Endowed Broad
Total Giving	95,935,818.7 (121790589.1)	110,268,061.7 (118781448.6)	70,882,758.6 (97939738.9)	119,002,823.9 (153971078.0)	54,580,482.4 (61586889.6)
Grant Size	109,457.1 (2139949.9)	67,820.5 (612385.4)	96,556.0 (2042676.3)	154,076.7 (2658962.8)	122,085.6 (2911585.2)
Number of Grants Made	1,526.6 (2046.4)	2,290.7 (2820.0)	963.1 (846.2)	893.8 (812.3)	1,540.0 (1984.2)
Grantmaker-Recipient State Match	0.442	0.563	0.533	0.373	0.313
Proportion of Giving to Universities	0.153	0.156	0.123	0.178	0.128
Proportion of Giving to Schools (K-12)	0.0540	0.0571	0.0712	0.0464	0.0500
Proportion of Giving for Research	0.0525	0.0430	0.0140	0.0966	0.0302
Grants to Agriculture & Environment	0.0969	0.0874	0.0519	0.138	0.0782
Giving to Agriculture & Environment	0.0861	0.0809	0.0466	0.132	0.0554
Grants to Arts & Culture	0.178	0.155	0.102	0.198	0.259
Giving to Arts & Culture	0.134	0.118	0.0892	0.158	0.157
Grants to Community & Government	0.120	0.0652	0.0398	0.182	0.142
Giving to Community & Government	0.0979	0.0587	0.0369	0.157	0.0897
Grants to Education	0.182	0.130	0.140	0.222	0.215
Giving to Education	0.152	0.122	0.111	0.204	0.133
Grants to Health	0.0928	0.0774	0.0490	0.134	0.0878
Giving to Health	0.0808	0.0726	0.0427	0.124	0.0593
Grants to Recreation	0.0111	0.00912	0.00602	0.0144	0.0134
Giving to Recreation	0.00926	0.00852	0.00644	0.0126	0.00779
Grants to Religion	0.0318	0.0434	0.0516	0.0222	0.0119
Giving to Religion	0.0180	0.0184	0.0328	0.0184	0.00866
Grants to Social Services	0.0859	0.0723	0.0781	0.0695	0.120
Giving to Social Services	0.0634	0.0522	0.0567	0.0589	0.0709
Observations	957,944	324,318	126,769	293,631	194,620

Mean (Standard Deviation) or Proportion reported; Grant-Level data

Table 3.3 Category Distributions

Classification System	Nonprofit-Level		Grant-Level	
	Freq.	Percent	Freq.	Percent
Donation Focused	153	21.61%	324,318	33.86%
Donation Broad	103	14.55%	126,769	13.23%
Endowed Focused	186	26.27%	293,631	30.65%
Endowed Broad	235	33.19%	194,620	20.32%
Unclassified	31	4.38%	18,606	1.94%
IRS Type	Freq.	Percent	Freq.	Percent
Private Foundation	382	54.11%	483,064	50.43%
Public Charity	243	34.42%	441,918	46.13%
Supporting Organization	48	6.80%	11,064	1.15%
Private Operating Foundation	18	2.55%	11,741	1.23%
Group Status	13	1.84%	9,169	0.96%
Non-Exempt	2	0.28%	988	0.10%
GuideStar Exchange Level	Freq.	Percent	Freq.	Percent
Gold	32	4.53%	27,871	2.91%
Silver	159	22.52%	363,166	37.91%
Bronze	33	4.67%	78,960	8.24%
Participant, not to level	28	3.97%	30,315	3.16%
Does not participate	452	64.02%	445,795	46.54%
Not in guidestar	2	0.28%	11,837	1.24%
Charity Navigator Status	Freq.	Percent	Freq.	Percent
Ranked	134	18.98%	235,258	24.56%
Potentially eligible	92	13.03%	74,897	7.82%
Not Eligible	477	67.56%	646,303	67.47%
Removed ranking	1	0.14%	81	0.01%
No Record	2	0.28%	1,405	0.15%

Table 3.4 Category Comparisons

Variable	(1) Donation Focused	(2) Donation Broad	(3) Endowed Focused	(4) Endowed Broad
Guidestar Mission Listed	1	1	0.241	0.128
Guidestar Impact Statement Provided	0.431	0.394	0.0357	0.0213
Guidestar External Assessment Provided	0.206	0	0.125	0.0213
IRS Status				
Public Charity	0.935	0.971	0	0
Private Foundation	0	0	0.904	0.796
Supporting Organization	0	0	0.0642	0.153
Private Operating Foundation	0	0	0.0321	0.0511
Group Status	0.0654	0.0291	0	0
Non-Exempt	0	0	0	0
Guidestar Exchange Level				
Gold	0.131	0.107	0	0.00426
Silver	0.556	0.583	0.0695	0.00426
Bronze	0.0327	0.0485	0.0749	0.0383
Participant, Not to Level	0.0654	0.233	0.0535	0.0213
Does Not Participate	0.216	0.0291	0.802	0.932
Not in Guidestar	0	0	0	0
Charity Navigator Status				
Ranked	0.608	0.379	0	0.00851
Potentially Eligible	0.229	0.301	0.0267	0.0894
Not Eligible	0.157	0.311	0.968	0.902
Removed Ranking	0	0.010	0	0
No Record	0.00654	0	0.00535	0
Charity Navigator Reason Not Ranked*				
Suspended ranking of community foundations	0.625	0.469	0	0
Suspended ranking of hospital foundations	0	0.0625	0	0
Suspended ranking of land trusts	0	0.0313	0	0
Not 501c3 public charity	0	0	0	0
Not Form 990 filer	0.0417	0.0625	0	0
Private Foundation	0	0	0.967	0.939
Donor advised funds	0.0417	0.0625	0	0
Service for individuals/givers/revenue from one source	0.250	0.0625	0.0110	0.0236
Criteria not met: nontrivial fundraising expenses	0.0417	0.125	0.0221	0.0236
Criteria not met: filed at least 7 full years of form 990's	0	0.0938	0	0
Criteria not met: at least \$1 million in revenues	0	0.0313	0	0.0142
Observations	153	103	187	235

Proportions reported; *Proportion of Not Eligible reported

Table 3.5 Multinomial Logit Result

Variables	(1) Donation Focused	(2) Donation Broad	(3) Endowed Focused	(4) Endowed Broad	(5) Donation- Based (Compared to
Guidestar Impact Statement Provided	0.612 (163.8)	0.293 (107.5)	1.001 (523.0)	-1.907 (794.3)	0.334*** (0.0651)
Application: Application Form Required	0.127* (0.0706)	0.111 (0.0725)	-0.118** (0.0486)	-0.120*** (0.0386)	0.243*** (0.0395)
Geographic Focus: Single State	0.217*** (0.0731)	0.0149 (0.0655)	-0.143*** (0.0535)	-0.0891** (0.0411)	0.240*** (0.0472)
Membership: Regional	-0.266*** (0.0613)	-0.0559 (0.0535)	0.300*** (0.0812)	0.0215 (0.0663)	-0.328*** (0.0615)
Membership: Affinity Groups	0.106* (0.0625)	-0.112** (0.0460)	0.0313 (0.0645)	-0.0256 (0.0469)	-0.00437 (0.0574)
Subject of Interest: Arts & Culture	-0.0534 (0.0675)	0.0762 (0.0623)	-0.121** (0.0578)	0.0979** (0.0469)	0.0196 (0.0522)
Subject of Interest: Health/Science Research	0.0771 (0.0618)	-0.0764 (0.0590)	0.0812 (0.0616)	-0.0819 (0.0539)	0.00262 (0.0538)
Subject of Interest: Environment	0.169*** (0.0567)	-0.0438 (0.0519)	-0.0502 (0.0563)	-0.0746 (0.0468)	0.120** (0.0471)
Subject of Interest: Health Care	-0.00234 (0.0650)	0.117* (0.0613)	-0.172*** (0.0517)	0.0569 (0.0437)	0.108** (0.0496)
Salary Share of Expenditures	0.117 (0.120)	0.0351 (0.0866)	-0.267 (0.260)	0.116 (0.115)	0.0192 (0.0354)
Total Revenue	8.13e-10** (3.83e-10)	-2.27e-10 (4.36e-10)	3.39e-10 (4.15e-10)	-9.24e-10* (4.94e-10)	5.33e-10** (2.15e-10)
IRS Ruling Year	-0.000420 (0.00131)	-9.34e-05 (0.00114)	-0.000741 (0.00127)	0.00125 (0.00104)	-0.000711 (0.00115)
Observations	243	243	243	243	242

MNL Marginal Effects reported; Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table 3.6 OLS Regression Results of Annual Data, 2007-2011

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Classification Category (Referent: Donation Focused)	LN Total Giving	LN Median Grant \$	LN TG to UNIS	LN TG for Social Innovation	LN TG for Research	LN TG for Health
Donation Broad	-0.122** (0.0603)	0.0531 (0.0533)	-0.660*** (0.211)	-0.372*** (0.113)	-1.150*** (0.382)	-0.334 (0.389)
Endowed Focused	-0.0367 (0.0697)	0.624*** (0.141)	0.150 (0.310)	0.135 (0.525)	0.202 (0.931)	-0.415 (0.865)
Endowed Broad	-0.208*** (0.0673)	0.655*** (0.144)	-1.563*** (0.414)	-0.460*** (0.143)	-0.955* (0.530)	-0.788 (0.655)
Lagged Proportion Grantmaker-Recipient State Match	0.00286 (0.0971)	-0.100 (0.0958)	-0.388 (0.383)	-0.238 (0.181)	-0.247 (0.476)	0.623 (0.509)
Lagged Lobbying Activities	0.183 (0.112)	-0.0365 (0.105)	0.539 (0.348)	0.250 (0.222)	1.112** (0.527)	0.615 (0.569)
Lagged Proportion of Expenditures to Salaries	-1.693*** (0.436)	-0.527 (0.321)	-1.798 (1.392)	-1.408* (0.719)	0.304 (1.874)	-3.132 (1.946)
Lagged Proportion of Expenditures to Fundraising	0.111 (0.650)	2.012*** (0.658)	-3.614* (1.977)	-1.481 (0.956)	-4.707 (3.066)	-0.680 (3.855)
Lagged Outcome	0.821*** (0.0277)	0.711*** (0.0445)	0.739*** (0.0344)	0.579*** (0.0983)	0.663*** (0.0292)	0.646*** (0.0293)
Constant	7.125*** (2.723)	3.638 (2.406)	18.45** (8.803)	8.778 (6.157)	23.48 (18.35)	-19.47 (19.22)
Nonprofit Age & Size (Lagged Assets) Controls	X	X	X	X	X	X
Observations	1,005	1,005	1,005	1,005	1,005	1,005

OLS Coefficients, clustered on EIN; Level of observation: Year; Sample: 2007-2011

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table 3.7 OLS Regression Results of Annual Data, Recession: 2008-2009

Variable	(1) LN Total Giving	(2) LN Median Grant \$	(3) LN TG to UNIS	(4) LN TG for Social Innovation	(5) LN TG for Research	(6) LN TG for Health
Classification Category (Referent: Donation Focused)						
Donation Broad	-0.126 (0.0912)	0.106 (0.0876)	-0.877*** (0.327)	-0.180 (0.179)	-2.258*** (0.519)	-0.878 (0.592)
Endowed Focused	-0.120 (0.0971)	0.866*** (0.194)	-0.0240 (0.292)	0.240 (0.548)	0.154 (1.342)	-0.489 (1.311)
Endowed Broad	-0.309** (0.121)	0.655*** (0.227)	-2.532*** (0.724)	-0.481*** (0.180)	-1.436* (0.866)	-1.621 (1.058)
Lagged Proportion Grantmaker-Recipient State Match	0.0816 (0.150)	-0.00146 (0.159)	-0.615 (0.633)	-0.460 (0.300)	-0.0562 (0.683)	1.695** (0.821)
Lagged Lobbying Activities	0.278* (0.150)	0.0958 (0.172)	0.455 (0.490)	-0.0291 (0.282)	1.103 (0.809)	0.319 (0.892)
Lagged Proportion of Expenditures to Salaries	-1.888*** (0.696)	-1.239** (0.586)	0.201 (2.437)	-1.666* (0.875)	0.343 (2.812)	-3.128 (3.128)
Lagged Proportion of Expenditures to Fundraising	-0.549 (0.908)	2.524** (1.053)	-13.47*** (3.784)	-0.891 (1.083)	-11.29*** (4.135)	-2.847 (6.084)
Lagged Outcome	0.765*** (0.0436)	0.626*** (0.0576)	0.601*** (0.0537)	0.636*** (0.142)	0.549*** (0.0455)	0.491*** (0.0448)
Constant	7.828* (4.555)	4.531 (3.547)	20.70 (14.54)	6.219 (8.029)	32.27 (25.11)	-24.28 (28.59)
Nonprofit Age & Size (Lagged Assets) Controls	X	X	X	X	X	X
Observations	465	465	465	465	465	465

OLS Coefficients, clustered on EIN; Level of observation: Year; Sample: 2008-2009
Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table 3.8 OLS Regression Results of Annual Data, Post recession: 2010-2011

Variable	(1) LN Total Giving	(2) LN Median Grant \$	(3) LN TG to UNIS	(4) LN TG for Social Innovation	(5) LN TG for Research	(6) LN TG for Health
Classification Category (Referent: Donation Focused)						
Donation Broad	-0.115 (0.0872)	0.0198 (0.0570)	-0.471* (0.255)	-0.542*** (0.151)	0.00277 (0.376)	0.109 (0.326)
Endowed Focused	0.0364 (0.101)	0.307** (0.136)	0.552 (0.470)	0.00919 (0.521)	0.620 (0.572)	-0.490 (0.945)
Endowed Broad	-0.104 (0.0888)	0.526*** (0.176)	-0.552 (0.389)	-0.457** (0.192)	-0.125 (0.442)	0.0973 (0.465)
Lagged Proportion Grantmaker-Recipient State Match	-0.0838 (0.151)	-0.149 (0.0939)	-0.0481 (0.404)	-0.0509 (0.215)	-0.132 (0.452)	0.0128 (0.478)
Lagged Lobbying Activities	0.0924 (0.154)	-0.126 (0.0978)	0.468 (0.427)	0.529 (0.393)	0.598 (0.499)	0.650 (0.474)
Lagged Proportion of Expenditures to Salaries	-1.460** (0.679)	-0.0336 (0.347)	-3.724** (1.473)	-1.268 (1.026)	0.880 (1.666)	-2.377 (1.829)
Lagged Proportion of Expenditures to Fundraising	0.657 (0.898)	1.436* (0.756)	4.969* (2.733)	-1.924 (1.484)	1.620 (3.285)	-0.379 (2.742)
Lagged Outcome	0.870*** (0.0379)	0.843*** (0.0531)	0.873*** (0.0304)	0.549*** (0.105)	0.776*** (0.0346)	0.792*** (0.0314)
Constant	6.186* (3.326)	2.445 (2.343)	12.31 (10.37)	11.39 (8.269)	13.99 (16.64)	-17.70 (14.27)
Nonprofit Age & Size (Lagged Assets) Controls	X	X	X	X	X	X
Observations	540	540	540	540	540	540

OLS Coefficients, clustered on EIN; Level of observation: Year; Sample: 2010-2011

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table 3.9 OLS Regression Results of Grant Data, 2007-2011

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Classification Category (Referent: Donation Focused)	All Areas	Supporting Research	Arts & Culture	Environment	Health	Health - Diseases	Health - Care
Donation Broad	0.0618 (0.0477)	-0.366*** (0.119)	-0.0692 (0.0699)	-0.339** (0.132)	0.107 (0.0937)	-0.0631 (0.174)	0.207** (0.0960)
Endowed Focused	0.542*** (0.124)	0.524** (0.239)	0.241 (0.181)	0.654*** (0.190)	0.566** (0.252)	0.583** (0.290)	0.560* (0.322)
Endowed Broad	0.252** (0.107)	0.129 (0.284)	0.314** (0.149)	0.251 (0.176)	0.361* (0.186)	0.243 (0.147)	0.418** (0.209)
Grantmaker-Recipient State Match	0.116*** (0.0361)	0.0322 (0.131)	0.186*** (0.0441)	-0.110 (0.0716)	0.296*** (0.0741)	0.312*** (0.117)	0.294*** (0.0648)
Lagged Lobbying Activities	0.130** (0.0651)	0.157 (0.100)	0.184*** (0.0595)	0.149 (0.110)	0.474*** (0.0981)	-0.0330 (0.0670)	0.722*** (0.123)
Lagged Proportion of Expenditures to Salaries	1.192 (0.745)	2.029*** (0.745)	-0.895** (0.452)	3.164*** (0.907)	1.608 (1.004)	1.187 (1.248)	1.816* (0.974)
Lagged Proportion of Expenditures to Fundraising	0.220 (1.299)	0.807 (1.158)	-0.733 (1.007)	1.074 (1.258)	1.821 (1.274)	2.346 (2.498)	0.891 (1.426)
Lagged Total Giving to for Research (LN)	0.00293 (0.00275)						
Lagged Average Grant Size (LN)	0.409*** (0.0495)	0.691*** (0.108)	0.208*** (0.0577)	0.577*** (0.0975)	0.448*** (0.0595)	0.626*** (0.107)	0.411*** (0.0571)
Lagged Total Giving for Outcome (LN)	-0.0203 (0.0266)	0.0111* (0.00597)	0.00771** (0.00362)	0.00264 (0.00611)	-0.0122** (0.00561)	-0.00102 (0.00716)	0.00208 (0.00746)
Constant	5.091** (2.492)	2.708 (6.863)	8.506*** (3.057)	-0.520 (5.263)	1.401 (5.413)	2.253 (8.068)	2.202 (5.881)
Nonprofit Age & Size (Lagged Assets) Controls	X	X	X	X	X	X	X
Observations	351,708	10,634	44,537	20,323	19,939	5,047	15,014

OLS Coefficients, clustered on EIN; Level of observation: Grant; Sample: 2007-2011; Outcome: LN Grant Size

Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1

*Equation (1) includes controls for lagged proportion of total giving to universities, schools, & hospitals

Table 3.10 OLS Regression Results of Grant Data, Recession: 2008-2009

Variables	(1) All Areas	(2) Supporting Research	(3) Arts & Culture	(4) Environment	(5) Health	(6) Health - Diseases	(7) Health - Care
Classification Category (Referent: Donation Focused)							
Donation Broad	0.0757 (0.0581)	-0.341*** (0.128)	-0.00715 (0.104)	-0.382** (0.172)	0.212** (0.0966)	0.247 (0.189)	0.203** (0.0941)
Endowed Focused	0.690*** (0.201)	0.635 (0.406)	0.122 (0.150)	0.634** (0.299)	0.392 (0.330)	0.837*** (0.275)	0.159 (0.400)
Endowed Broad	0.317 (0.204)	0.518 (0.397)	0.821*** (0.234)	0.776** (0.370)	0.566*** (0.187)	0.242 (0.158)	0.670*** (0.195)
Grantmaker-Recipient State Match	0.112*** (0.0372)	0.264 (0.179)	0.171*** (0.0513)	-0.149* (0.0818)	0.309*** (0.0916)	0.422*** (0.117)	0.230*** (0.0863)
Lagged Lobbying Activities	0.186** (0.0750)	0.565*** (0.152)	0.137 (0.114)	0.350** (0.163)	0.441*** (0.112)	0.133 (0.157)	0.546*** (0.116)
Lagged Proportion of Expenditures to Salaries	1.330 (1.070)	2.857*** (0.783)	-2.112** (0.972)	3.948*** (1.247)	-0.798 (0.903)	1.265 (1.595)	-1.161 (0.924)
Lagged Proportion of Expenditures to Fundraising	0.318 (1.658)	3.053* (1.756)	-0.575 (1.589)	1.381 (2.135)	2.198 (1.627)	2.654 (2.532)	1.340 (1.637)
Lagged Total Giving to for Research (LN)	0.000874 (0.00386)						
Lagged Average Grant Size (LN)	0.335*** (0.0615)	0.675*** (0.120)	0.145*** (0.0414)	0.407*** (0.114)	0.358*** (0.0621)	0.596*** (0.0923)	0.288*** (0.0684)
Lagged Total Giving for Outcome (LN)	-0.000740 (0.0355)	-0.00168 (0.00791)	0.00817 (0.00516)	-0.00831 (0.00796)	-0.0192*** (0.00636)	-0.00481 (0.00970)	-0.0224*** (0.00722)
Constant	5.807* (3.165)	-8.929 (9.026)	9.887** (4.666)	-3.197 (6.435)	2.025 (5.172)	1.772 (5.889)	1.002 (5.387)
Nonprofit Age & Size (Lagged Assets) Controls	X	X	X	X	X	X	X
Observations	175,344	4,737	20,300	9,475	8,675	2,404	6,357

OLS Coefficients, clustered on EIN; Level of observation: Grant; Sample: 2008-2009; Outcome: LN Grant Size

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

*Equation (1) includes controls for lagged proportion of total giving to universities, schools, & hospitals

Table 3.11 OLS Regression Results of Grant Data, Post recession: 2010-2011

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Classification Category (Referent: Donation Focused)	All Areas	Supporting Research	Arts & Culture	Environment	Health	Health - Diseases	Health - Care
Donation Broad	0.0445 (0.0484)	-0.324** (0.125)	-0.0708 (0.0549)	-0.219* (0.120)	0.0731 (0.111)	-0.264* (0.141)	0.176* (0.104)
Endowed Focused	0.321*** (0.116)	0.356* (0.209)	0.257 (0.213)	0.527** (0.215)	0.803** (0.404)	0.385 (0.360)	0.853* (0.495)
Endowed Broad	0.157* (0.0908)	0.00490 (0.243)	0.242** (0.101)	0.206 (0.171)	0.343* (0.181)	0.251 (0.220)	0.369* (0.190)
Grantmaker-Recipient State Match	0.122*** (0.0431)	-0.106 (0.0838)	0.197*** (0.0589)	-0.00212 (0.0792)	0.359*** (0.0889)	0.181* (0.105)	0.369*** (0.0952)
Lagged Lobbying Activities	0.0219 (0.127)	-0.150 (0.142)	0.113 (0.102)	-0.142 (0.125)	0.477** (0.202)	-0.424** (0.170)	0.726*** (0.228)
Lagged Proportion of Expenditures to Salaries	0.962* (0.491)	2.140** (1.042)	0.625 (0.428)	2.826*** (0.880)	2.500** (1.252)	0.974 (0.948)	2.679** (1.192)
Lagged Proportion of Expenditures to Fundraising	-0.0589 (0.877)	0.446 (1.346)	-0.753 (1.013)	1.425 (1.260)	1.140 (1.115)	2.230 (2.141)	0.0826 (1.914)
Lagged Total Giving to for Research (LN)	0.00647* (0.00370)						
Lagged Average Grant Size (LN)	0.554*** (0.0459)	0.682*** (0.0857)	0.423*** (0.0366)	0.754*** (0.0837)	0.517*** (0.0789)	0.645*** (0.0949)	0.460*** (0.0653)
Lagged Total Giving for Outcome (LN)	-0.0651*** (0.0246)	0.0309*** (0.00932)	0.00916** (0.00394)	0.0304*** (0.00740)	-0.000524 (0.0127)	0.0342** (0.0170)	0.0176* (0.0101)
Constant	4.923** (2.023)	3.400 (5.625)	6.181*** (2.369)	1.562 (5.080)	0.713 (6.162)	6.563 (8.322)	0.207 (6.538)
Nonprofit Age & Size (Lagged Assets) Controls	X	X	X	X	X	X	X
Observations	176,364	5,897	24,237	10,848	11,264	2,643	8,657

OLS Coefficients, clustered on EIN; Level of observation: Grant; Sample: 2010-2011; Outcome: LN Grant Size
Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1

*Equation (1) includes controls for lagged proportion of total giving to universities, schools, & hospitals

CHAPTER FOUR: THE RACE FOR A CURE: COLLABORATORS OR COMPETITORS? MODELING THE EFFECTS OF COMPETITION IN DISEASE-SPECIFIC CHARITIES

4.1 Introduction

Economic theory holds that competition promotes innovation in the private market. In the third sector, however, the role of competition is uncertain. Multiple public charities and foundations working toward the same goal likely mean higher transaction costs in increased fundraising, marketing, and salaries as the organizations compete for market share. Previous literature on the effects of competition in nonprofit organizations has focused on the trade-offs from increased marketing for donation dollars in response to market concentration (Thornton, 2006) and the effect of competition on the fundraising expense ratio (Ashley & Faulk, 2010; Feigenbaum, 1987). But theory is still lacking on the subject of the effect of competition between nonprofits on their ability to produce public goods: “Relative to their for-profit counterparts, the particular incentives guiding nonprofit managers are not well understood by economists” (Thornton, 2006, p. 206).

The ultimate questions of interest regarding philanthropic organizations are *How much public good are they producing? Is this cost-effective relative to the public sector?* and *How can nonprofits be more efficient public good providers?* From a public policy perspective, these questions are important because of the advantageous charitable tax policies provided to nonprofits and their donors under the assumption that they are providing public goods. Unfortunately, public goods are often difficult to measure and highly subjective, posing challenges to empirically evaluating their effectiveness. However, answering these questions has major consequences for the organization, regulation, and value of the third sector.

This paper begins to address these questions by examining the markets of disease-specific public charities.⁸ Disease-specific charities seek to find cures for diseases, improve treatments, and provide patient support and advocacy. In recent years, they have become more aggressive in funding research and providing public advocacy, even if their cause affects a small number of people. While research funding from disease-specific charities has grown to more than \$1 billion a year (Chronicle of Philanthropy, 2011; Haugh, 2010), it is unknown whether the rate of progress has improved. This paper provides insights on the path to a cure by developing an innovation production model to evaluate the conditions that promote and deter progress in finding cures for diseases, with careful attention to the role of competition. This paper contributes to the nonprofit and research & development literatures by developing the first innovation production function for disease-specific charities and empirically testing the model to examine the effect of competition.

The paper proceeds as follows. A brief discussion of disease-specific charities (Section 2) is followed by a review of the theoretical foundations for the nonprofit production function (Section 3). Section 4 then puts forth the model of nonprofit innovation production, and Section 5 empirically evaluates the model. Section 6 presents the results and section 7 provides a discussion.

4.2 Disease-Specific Charities

Most disease-specific nonprofits are public charities that focus on supporting and treating those affected by a specific disease, with the ultimate goal of curing that disease. Disease-specific charities can focus on diseases that affect many people but remain incurable or on “orphan” diseases that affect a small number of people and thus do not appeal to pharmaceutical companies as potentially profitable (Feldman & Graddy-Reed, 2014). These organizations are mission-oriented

⁸ Public charities are a class of 501(c)(3) nonprofit organizations that typically receive contributions from many sources or receive income from fee-for-service activities. For more information on the distinction, see <http://www.irs.gov/Charities-&-Non-Profits/Charitable-Organizations/Public-Charities>

and often operate in an entrepreneurial vein (Shaywitz, 2012). They serve as links, connecting patients and families to information and support structures, increasing knowledge, and providing advocacy (Leopold, 2012). For rare diseases, these nonprofits serve as a direct and aggressive means of saving family members. Often created by parents (e.g., Hannah's Hope Fund) or patients (e.g., Chordoma Foundation) desperate for cures, they are the prime collectors and allocators of resources toward fighting the disease (Chronicle of Philanthropy, 2012; Poulos, 2014).

Today, the US has more than 1,400,000 nonprofit organizations, including approximately 950,000 public charities and 97,000 private foundations (National Center for Charitable Statistics, 2013a). Health-related organizations account for roughly 12% of reporting public charities (Pettijohn, 2013). Approximately 26% of these health-oriented charities are disease-specific and/or research-centered organizations. These charities, classified with a *G* (specific diseases) or *H* (medical research) major code by the National Taxonomy of Exempt Entities (NTEE),⁹ account for 3% of all active public charities (Table 4.1).

While health has been a major focus of nonprofits throughout US history, disease-specific nonprofits have had a shorter existence. The American Cancer Society was formed in 1913 to raise awareness and educate the public about cancer but did not begin its research program until 1946 (American Cancer Society, 2014). The American Heart Association developed in reverse, forming in 1924 when a group of physicians and social workers sought to conduct studies on heart disease and later expanding its services to the public (American Heart Association, 2014). The March of Dimes Foundation began in 1938 to cure polio. After reaching that goal, the foundation transitioned to a new mission, improving infant survival (Chang, 2010).

⁹ The NTEE serves as the topical classification system for nonprofit organizations used by the IRS, National Center for Charitable Statistics, and Foundation Center. The hierarchical system groups organizations into twenty-six major categories to allow for better analysis of the nonprofit sector (<http://nccs.urban.org/classification/>).

Health charities have changed their techniques significantly over time, most notably in the 1960s and 1980s. Prior to the 1960s, the few major health charities divided the year for individual fundraising campaigns. However in the 1960s, the women volunteers who had previously run these efforts shifted their focus to spend less time fundraising (Leopold, 2012). This change in strategy had two major consequences: year-round fundraising by organizations, and the creation of multiple organizations dedicated to fighting the same disease (Leopold, 2012). The 1980s brought about a shift in lobbying strategies. Disease nonprofits previously acted together to lobby for overall funding increases in biomedical research (Best, 2012). However, when AIDS and breast cancer groups had great success with separate lobbying efforts, other disease charities began to opt out of the aggregate and instead increase targeted disease-specific lobbying efforts. This approach resulted in a drastic increase in the overall amount of money spent on lobbying (Best, 2012). These organizations are now changing their approach to funding research.

4.2.1 Leveraging Venture Philanthropy in the Drug-Development Pipeline

Nonprofits have emerged as an important partner in the drug-development pipeline. Pharma has joined with them to form public-private partnerships and utilize their funding streams to help support the creation of drugs to treat rare diseases (Bottazzi, Miles, Diemert, & Hotez, 2006; Hale, Woo, & Lipton, 2005; Kaitin, 2010).¹⁰ Figure 4.1 shows the drug-development pipeline process. Previously, federal funding supported basic research, and venture capital then supported clinical trials and marketization of drugs. However, federal funding has decreased, and both federal and

¹⁰ Pharma has typically avoided rare diseases viewed as offering low profits because of their small or poor potential markets (Hale, Woo, & Lipton, 2005). Yet the need for these drugs is high. As a result, the US government has attempted to provide incentives to develop drugs to treat rare diseases. In 1983, Congress passed the Orphan Drug Act, and by 1999, more than 200 drugs to treat rare diseases were introduced, a sharp increase from the 10 such drugs introduced in the preceding decade (Grabowski, 2002). Then in 2007, the US FDA launched a program that gives priority review vouchers to companies for these types of drugs (Waltz, 2008), resulting in a six-month decrease in approval time for such drugs (Kaitin & DiMasi, 2010).

industry funders have become more risk-averse, creating the research funding valley of death (Feldman & Graddy-Reed, 2014). Further, chances of success are low, with only 1% of preclinical drugs reaching the clinical trial stage and 22% of those compounds gaining FDA approval (Grabowski, 2002). The time and cost of these attempts continue to rise and now average almost \$2 billion and ten years from discovery to launch (Feldman & Graddy-Reed, 2014; Kola, 2008; Powell, Koput, & Smith-Doerr, 1996).

Disease-specific nonprofits are now providing much-needed capital support in this funding valley, leveraging smaller amounts in the early stages to show viability of projects to industry funders for later-stage development (Feldman & Graddy-Reed, 2014). These much-needed early stage funds not only fill a gap but also offer branded support to help researchers obtain follow-on funding from investors (Shamp, 2014; Wallace, 2010). Some nonprofits are also creating their own research labs to decrease the cost of studying a drug (Shaywitz, 2012). Further, since the size of patient populations often poses problems for rare-disease clinical trials (another factor that deters pharmaceutical companies from entering the market), nonprofits are using their networks to create patient pools for clinical trials (Feldman & Graddy-Reed, 2014; Wallace, 2010).

The desire for greater effectiveness leads the rise in nonprofit funding. Organizations are turning to strategic approaches to giving (venture philanthropy) to meet their mission and find cures. This strategic or venture approach reflects the view that funding research constitutes an investment rather than a gift. These nonprofits have more involvement with the project than would previously have been expected. They play a role in forming teams of researchers across institutions, instituting benchmarks and milestone agreements, and incorporating clawbacks, royalties, and licensing terms into clauses regarding outcomes (Feldman & Graddy-Reed, 2014).

Disease-specific nonprofits are interested in the entire drug-development pipeline from academic research to drugs on the market (Shaywitz, 2012) with the goal of ensuring that their

patients receive the benefit of the funded research through new drugs and treatments. The Cystic Fibrosis Foundation, ALS Association, Muscular Dystrophy Association, and Wellcome Trust all require royalties from pharmaceutical companies when drugs go to market (Chronicle of Philanthropy, 2011). These terms provide sustainability to the organization to further benefit their goal. While this trend is widespread, many disease-specific nonprofits consciously choose not to add outcome terms in an effort to speed up the drug-development process. For example, the Chordoma Foundation partners with firms to quickly test preclinical drugs against the foundation's panel of cells without signing licensing agreements. The goal of accelerating the time to product has motivated the foundation to make models available to firms to ease the process (Poulos, 2014). This approach highlights an important implication: many of these nonprofits are directly funding research by for-profit companies. This relationship prompts concerns regarding transparency to donors, conflict of interest in the independence of the research, dissemination of research results that may be negative, and the flow of funds between sides (Feldman & Graddy-Reed, 2014; Paluzzi, 2012). These issues need to be considered when evaluating the benefits of this approach.

4.2.2 Partnering and Lobbying

Nonprofit organizations operating under these strategic principles often work to form research teams and partnerships that cross academic and industry boundaries. They also stipulate terms for data sharing among researchers and the research community as well as mandate attendance at conferences (Bercovitz et al., Working Paper). The Michael J. Fox Foundation, for example, hosts an annual conference that brings together academics and industry players to share their research on Parkinson's disease (Nocera, 2013).

Disease-specific nonprofits are also continuing traditional nonprofit work of lobbying and advocating for additional attention and funding on behalf of their patients. For example, the JDRF

(formerly the *Juvenile Diabetes Research Foundation*) is working to educate doctors and obtain support for payment from insurance companies because regulatory approval is not enough to get new therapies to patients (Wallace, 2010). Best (2012) has shown that this advocacy produces political outcomes at the institutional level, with the most organized patient groups generating more research funding for the disease overall.

While many examples of success through strategic efforts exist (Als-Nielsen, Chen, Gluud, & Kjaergard, 2003; Best, 2012; Feldman & Graddy-Reed, 2014; Paluzzi, 2012), questions remain about their contributions and results. The amount of research funding from disease-specific nonprofits has been growing rapidly since 2000 and now amounts to roughly \$1.2 billion per year for researchers (Chronicle of Philanthropy, 2011; Haugh, 2010). *Genetic Engineering & Biotechnology News* (GEN) ranked the top twenty grantmaking disease nonprofits (which contributed a combined \$700 million to research) by percentage of total revenue spent on grants (table 4.2). While this is a large sum, it is a fraction of the average \$2 billion required to bring one drug to market (Kola, 2008). In addition, as GEN notes, the list includes four Parkinson's disease-related organizations, raising questions about the best use of funds and role of competition in the nonprofit sector (Genetic Engineering & Biotechnology News, 2013).

4.3 Developing a Nonprofit Innovation Production Function

Properly assessing the role of competition in disease-specific charity markets requires a production function that draws on multiple theories. Innovation production theory provides the theoretical framework for the model developed here. The field models innovative outputs as a function of innovative inputs. This paper applies it to the market of disease-specific charities to determine which attributes and actions contribute to the creation of innovation. The nonprofit

literature on markets and competition complements this foundation to incorporate the unique aspects of the third sector.

4.3.1 The Production of Innovation

Griliches (1979) first put forth the innovation production function to estimate the contribution of R&D activity to economic growth and technical knowledge. Many researchers have expanded this approach, modeling a variety of innovative outputs as a function of a series of innovative inputs (see Freel, 2005 for additional examples). Griliches assumed a Cobb-Douglas function and modeled the contribution of R&D through current and past investment along with aggregate industry knowledge and traditional inputs of labor and capital toward the creation of new knowledge (Griliches, 1979). R&D is generally accepted as the largest contributor to innovation.

Subsequent work has focused on knowledge spillovers. This work has found important distinctions in the role of firm size and geography (Audretsch & Feldman, 2004). Small firms are more connected to regional knowledge networks than are large firms (Almeida & Kogut, 1997) and benefit more from the knowledge spillovers (Audretsch & Vivarelli, 1996; Feldman, 1994). Knowledge spillovers appear to have a stronger impact in industries where new economic knowledge plays an important role (Audretsch & Feldman, 1996). Geographically, location matters for innovation because of availability of knowledge (Slavtchev & Fritsch, 2005) and the spillovers it produces (Feldman, Gambardella, Harhoff, & Mariani, Working Paper; Ponds, Van Oort, & Frenken, 2010).

Most empirical estimations follow Griliches (1979) and assume a Cobb-Douglas production function of an innovative output as a function of innovative inputs that is then linearized through natural logs (Crépon & Duguet, 1997; Fritsch, 2002; Kortum & Lerner, 2000). Many other studies model the production function at the firm level (Audretsch & Feldman, 2004). However, concerns

exist regarding the ability to find a causal relationship between inputs and innovation at the firm level, leading to a preference for spatial or industry units of observation. The theoretical nonprofit model developed here allows for analysis at both the organization and disease levels to account for these challenges.

The Role of Competition in Innovation

It is a recurring question as to whether competition or market power encourages innovation (Blundell, Griffith, & Van Reenen, 1999). Schumpeter (1934, 1942) argues that large firms and concentrated markets promote innovation and that perfect competition is not necessarily the best structure for encouraging R&D (Gilbert, 2006). The empirical research on the Schumpeterian hypothesis of firm size and innovation has yielded inconclusive results (W. M. Cohen & Levin, 1989). Some studies support the finding that process innovation is more profitable for large firms but product innovation is more likely in competitive markets (Gilbert, 2006). Other research has found that small firms tend to be more innovative in “less crowded” areas (Almeida & Kogut, 1997).

Empirical results regarding the role of competition on innovation are also inconclusive (W. M. Cohen & Levin, 1989) depending on the industry and innovation type (process or product) (Gilbert, 2006), with theory making both arguments (Audretsch & Feldman, 2004), in part because of the difficulty of including all of the relevant factors empirically (Gilbert, 2006). Some research has found that monopolies have a negative effect, while competition stimulates innovation (Geroski, 1990) in part because competition provides a high level of diversity in ideas and trials that one firm cannot provide (Gilbert, 2006). Others have found support for an inverted-U-shaped relationship where competition encourages firms to innovate when they are relatively equal but discourages innovation when firms are lagging behind, a finding that would complement Schumpeter’s theory (Aghion, Bloom, Blundell, Griffith, & Howitt, 2005). Research has also found variation by the unit

of analysis, with less competitive industries having fewer innovations than competitive industries but firms with a large market share within an industry linked to more innovation (Blundell et al., 1999).

However, many studies cite both competition and cooperation as essential to innovation (Teece, 1992). Firms participating in “innovation networks” (cooperating/collaborating) gain access to inputs they otherwise could not afford and expand their in-house capacity (Freel, 2005).

Cooperation among network firms in an industry can reduce disadvantages from size and increase small firms’ chances of survival (Audretsch & Feldman, 2004). When the geographic area includes more potential collaborators, the possibility for cooperation increases as a result of the greater likelihood of both random and planned collaboration (Feldman et al., Working Paper), increasing potential gains.

Innovation in Nonprofit Organizations

Little work has been done on the production of innovation within nonprofits. McDonald (2007) explores the role of organizational mission on innovativeness and finds that organizations with focused missions can more efficiently innovate (McDonald, 2007). Backus & Clifford (2012) find that in the UK, large charities have been growing faster than smaller ones. Backus & Clifford do not test the effect of this phenomenon on innovation but say it could have either a positive effect (large charities are effective providers) or a negative effect (large organizations are less likely to innovate) (Backus & Clifford, 2013). Jaskyte & Lee (2006) examine the role of inter-organizational relationships on innovation given that relationships across organizational type (industry, government, and nonprofit) are a means of responding to competition by increasing capacity through partnerships. They find significant correlations between some types of innovation and certain characteristics of partnership agreements (Jaskyte & Lee, 2006).

Role of Competition in Nonprofit Markets

As the number of nonprofits grows, the amount of funding available remains steady, increasing competition for scarce resources (Barman, 2002; Chetkovich & Frumkin, 2003). However, little is known about the effect of competition in the nonprofit market. Most of the literature on the subject is focused on the role of the fundraising ratio—how competition affects nonprofit behavior through the decision to pay for more or fewer fundraising efforts. While fundraising does bring in new donations, spending too much on fundraising may discourage donors who are sensitive to administrative cost ratios and thus decrease program expenditures (Rose-Ackerman, 1982). Empirical work has found that nonprofits collectively spend inefficient levels on fundraising, with expenditures increasing at a decreasing rate as market concentration increases (decreased competition) (Thornton, 2006).

Other theoretical work has focused on individual nonprofit responses in the face of competition. Depending on the nature of the competition, nonprofits in a competitive environment work to increase their share of the market by differentiating themselves, cooperating with other organizations, co-opting other organizations, or diversifying into less dense fields (Barman, 2002; Ritchie & Weinberg, 2000). In mixed markets (those containing for-profits and nonprofits), competition may produce positive externalities as the presence of nonprofits creates pressure for for-profits to provide for the public good (Hirth, 1997; Lakdawalla & Philipson, 2006; Rosenau & Linder, 2003).

Competition for Disease-Specific Charities

“A foundation which decided, for instance, to support only a particular area of medical research might find itself left high and dry when this particular area encounters success.”
(Boulding, 1962, p. 64)

While nonprofits have an advantage over for-profits in their longevity, as Boulding points out, reaching their goals should mean an end to the organizations. The idea that a goal is reached when the organization is no longer needed is counterintuitive to the private sector but is fundamental to nonprofits.

In the last ten years there has been a 25% increase in the number of 990-filing disease-specific charities (*G* or *H* major code) with an average of 15-20 new organizations created each month (table 1). Multiple organizations being created to tackle the same diseases raises questions about the effectiveness of having multiple organizations with the same mission competing for the scarce dollars available. Whether charities decide to compete across diseases, compete within a particular area, or collaborate, they must distinguish themselves from the other organizations to remain viable in the short run. However, just as with nonprofits in general, little theoretical or empirical work has explored the role of competition on outcomes for disease-specific charities. The field of disease-specific charities is currently dominated by cancer organizations, with the American Cancer Society raising \$1 billion, Susan G. Komen bringing in \$400 million, and the Leukemia and Lymphoma Society reporting \$320 million in revenues annually (T. Cohen, 2012). These organizations have secured such large market shares by effectively fundraising through efficient use of volunteers, brand building, marketing, and differentiation (T. Cohen, 2012). Yet questions remain about whether this is a valuable approach within disease—Would a single organization be more effective at fundraising and program work than multiple organizations (Genetic Engineering & Biotechnology News, 2013)?

Many observers feel that collaboration is more effective for nonprofits, given the large number of organizations. FasterCures, a think tank created to speed up medical research by working on connections among people, hosts an annual meeting to facilitate the mixing of fund-raisers, donors, and industry representatives with a goal of accelerating discoveries by decreasing competition, increasing collaboration, and stopping duplicate efforts (Anft, 2011). Parkinson's disease organizations have adopted this strategy: the National Parkinson Foundation has tried to position itself as complementary to rather than competitive with the Michael J. Fox Foundation, citing the disease as the true competition (T. Cohen, 2012). However, no work has tested which approach is more effective.

Feigenbaum (1987) is the only previous effort to examine the effect of competition on outcomes. She develops a model of nonprofit competition for donations in medical research organizations with the hypothesis that with new nonprofits entering the market, a larger share of revenue will go toward fundraising activities, with an unknown effect on program services. Feigenbaum finds that geographic competition (a decline in market concentration) increases the amount spent on fundraising but also increases research expenditures. Her results indicate that competition within the disease-charity market facilitates research (Feigenbaum, 1987).

4.4 A Disease-Specific Charity Innovation Production Function

This paper presents the first innovation production function for disease-specific charities. Many observers have called for theoretical development of the role of competition in nonprofit performance while citing the challenges of generating such theory (Boulding, 1962), yet only limited development toward nonprofit competition theory has occurred, especially regarding effects on outcomes. The lack of strong and accurate outcome measures as a result of abstract missions complicates the challenge of evaluating nonprofit effectiveness. Disease-specific charities provide a

slight advantage in such assessments by seeking outcomes that are usually products—drugs, therapies, or vaccines that will save lives. This provides a grounding similar to that of for-profit structures, allowing for work toward theoretical development using for-profit models.

This theory focuses on public charities rather than private foundations. While private foundations can and sometimes do focus their work on specific diseases, their legal and financial structure removes them from the competition debate. While public charities depend on donations that they use to sponsor research and provide advocacy, private foundations operate with interest earned from their endowments. They (usually) have no fundraising or marketing expenditures because their source of revenue is secure. As a result, they do not compete for dollars as public charities do. It is possible that in high-supply fields, they compete for grantees, but common knowledge of the difficulty of obtaining grants disproves that prospect. The role of private foundations in the fight to cure diseases is important, since they also contribute research funding, adding to the aggregate knowledge of a disease. As a result, their presence is incorporated in the model through total “industry” knowledge.

Level(s) of Analysis

Following Griliches (1979), disease-specific charities require an innovation production function that models a charity’s innovation as a function of its inputs and of existing knowledge. Given previous literature on innovation production functions and the unique aspects of the nonprofit market, two Cobb-Douglas production functions are developed: one at the organizational level (Equation 4.1) and one at the disease level (Equation 4.2).

$$Innovation_i = \alpha(Inputs_i^\beta)(Knowledge_i^\gamma)(Knowledge_n^\delta) \quad (4.1)$$

The organizational-level function resembles the firm-level model, evaluating the role of the charity's inputs for the i^{th} nonprofit in the n^{th} disease and the surrounding environment on the creation of innovation.

$$Innovation_n = \alpha(Inputs_n^\beta)(Knowledge_n^\gamma) \quad (4.2)$$

The disease-level model resembles regional or industry production functions and models progress created for the n^{th} disease overall from the inputs across organizations and the institutional setting.

Innovative Outputs

For disease-specific organizations, the most accurate measure at either the disease or organizational level of production is new drugs and therapies to market (Acemoglu & Linn, 2003). However, given the incremental nature of innovation (Freel, 2005) and because experimentation is necessary for innovation (McDonald, 2007), some intermediate outcomes are also of interest to the process of innovation. These outcomes include receipt of intellectual property rights, drugs and therapies in clinical trials, and academic publication of results. These are progress reports necessary but not sufficient in the creation of new drugs and therapies and thus signal potential innovations. In addition, the receipt of royalty revenue serves as an indicator of financial returns from an innovation, providing a longer trajectory to the timeline of a charity's innovation cycle.

R&D spending is also an intermediate outcome for these charities and an indicator of potential innovations. Product innovations for these organizations exist but are usually indirectly produced. The majority of nonprofits work toward innovation as a pass-through—raising revenues and then thoughtfully reallocating funds to researchers who then make discoveries. As a result, these models are for the indirect production of innovation—inputs lead to research investments, which may then produce innovative outcomes, which, in turn, return to the charity in the form of

intellectual property or royalty revenues. Thus, while R&D investment serves as an input for for-profit functions, it serves as an output for the nonprofit function: it is what they can directly create.

Competition

This model explores the question of the role competition plays in the nonprofit market. Charities compete through marketing and advertising campaigns to sell their value and trust to potential donors. Charity age and size may lower the amount needed to compete if reputation is strongly tied to the organization's age or if there are economies of scale. Thus, older and larger charities are likely to be more efficient with their funding allocations despite the presence of competition. However, more concentrated markets could decrease innovation if larger nonprofit organizations are less innovative than small ones.

Competition between charities may have a positive effect on innovation if it leads to an increase in the pool of ideas but may have a negative effect if it duplicates efforts and results in inefficient spending on fundraising and marketing and overlapping salaries (Aghion et al., 2005; Backus & Clifford, 2013; Blundell et al., 1999; W. M. Cohen & Levin, 1989; Feigenbaum, 1987; Feldman & Audretsch, 1999; Feldman & Graddy-Reed, 2014; Gilbert, 2006). Alternately, given the possibility of cooperation, multiple charities may eschew competition in favor of cooperation by specializing and optimizing through gains to trade (T. Cohen, 2012). The hypothesis here is that although external competition is seen as valuable in the private market, in the nonprofit (disease-specific) market, internal competition fosters innovation and external competition leads to waste and lack of innovation, since fewer resources are devoted efficiently. Internal competition can refer to within the charity or partnerships with other organizations. Thus, the number of organizations in the field could have a positive effect if those organizations are specializing and cooperating or a negative effect if they are competing.

Inputs toward Innovation

A series of institutional factors, organizational characteristics, and direct inputs affect the production of innovation. These elements can positively or negatively affect the process of innovation for organizations or for the disease industry as a whole. In the long term, some of these inputs are likely to be affected by the production of innovation, but in the current time period (short term) they are exogenous. Table 4.3 presents the proposed inputs to be included in the disease-specific charity production function with their predicted sign and for-profit or nonprofit evidence, including competition as discussed above.

Regarding characteristics of the disease, prevalence and stigma are expected to impact the production of innovation at both the disease and organizational levels. Larger prevalence should positively affect innovation production, as market share has been shown to positively affect innovation in the private sector (Acemoglu & Linn, 2003; Bhattacharya & Packalen, 2008). However, stigma has been shown to have a negative impact in nonprofit empirics on advocacy and lobbying efforts, so it is expected to decrease progress toward innovation (Best, 2012).

Both existing internal and external knowledge as well as geographic proximity of researchers should positively affect innovation for disease-specific charities as they do in the for-profit market (Feldman & Audretsch, 1999; Feldman et al., Working Paper; Feldman, 1994; Ponds et al., 2010; Slavtchev & Fritsch, 2005). The more knowledge and opportunity for knowledge spillovers, the larger the pool for potential innovation.

Inputs at the disease and organizational levels include other R&D expenditures toward the disease by industry, academia, government, and nonprofit providers (both public charities and private foundations), which are expected to positively affect innovation creation by increasing the supply of resources dedicated to fighting the disease (Audretsch & Feldman, 2004; Feldman, 1994; Kortum & Lerner, 2000; Slavtchev & Fritsch, 2005). Use of collaboration and cooperation across

organization types through partnerships and knowledge-sharing conferences (Audretsch & Feldman, 2004; T. Cohen, 2012; Feldman et al., Working Paper; Feldman & Graddy-Reed, 2014; Freel, 2005; Jaskyte & Lee, 2006; Kar, 2010; Pober, Neuhauser, & Pober, 2001; Powell et al., 1996; Teece, 1992), nonprofits' lobbying efforts for greater support (Best, 2012; Feldman & Graddy-Reed, 2014), and high labor quality of researchers and advocates (Freel, 2005) should also increase innovation by enlarging the pool of ideas that leads to innovation.

Organizational-level traits may also influence innovation. Organization size may have a positive or negative effect depending on whether larger organizations are less innovative or more efficient in the nonprofit market (Audretsch & Vivarelli, 1996; Blundell et al., 1999; Boulding, 1962; W. M. Cohen & Levin, 1989; Feigenbaum, 1987; Feldman, 1994; Gilbert, 2006; Henderson & Cockburn, 1996). Age of organization, fundraising, and marketing expenditures are all expected to take away from the production of innovation, with older firms less likely to innovate and larger expenditures elsewhere taking away from innovative investments (Feigenbaum, 1987; Nickel & Eikenberry, 2009; Rose-Ackerman, 1982).

Both functions must also deal with a unique aspect of the nonprofit market: the presence of national affiliate organizations. Local chapters of national organizations can operate under different structures that range from ostensible full autonomy to complete dependence on the national parent. If affiliates are more autonomous, they should be treated as unique organizations rather than connected to their national organization (as done by Feigenbaum, 1987). But more dependent sub-organizations should be merged with their national parent organizations and treated as one (Feigenbaum, 1987). The IRS now asks more questions on the subject, and organizations have the option of filing a group return that incorporates their affiliates. The model uses this distinction to signal whether affiliates are independent. The decision to operate under the spoke-and-wheel structure may be an important factor in the production of innovation. The contrasting structures of

a national organization with dependent affiliates or those that operate independently could have a positive effect if greater size and control contribute to innovation or a negative effect if independent organizations connected to each other increase collaboration and innovation.

Together, this set of inputs draws from both the for-profit and nonprofit literatures to address how disease-specific charities can produce innovation and more effectively reach their goals.

4.5 An Empirical Specification of the Nonprofit Innovation Production Function

The theorized disease-specific charity innovation production function is next estimated empirically through three outcomes—R&D investment, royalty revenue, and lobbying expenditures.¹¹ These variables provide indicators of innovation at different stages of the process and capture different approaches. Following Feigenbaum (1987), the nonprofit’s grant expenditures serve as a proxy for R&D investment. As discussed previously, grant expenditures serve as an output for nonprofits because funding researchers is their direct effort in creating innovation. Royalty revenue is an indicator of successful innovation that has produced commercial benefits for the organization. Lobbying expenditures captures an alternate approach to innovation production since nonprofits advocate on behalf of increased funding for and attention to their causes; they leverage their vocal presence and smaller funds to gain benefits from more powerful institutions. Following the literature, the Cobb-Douglas production function is linearized through natural logs (Crépon & Duguet, 1997; Fritsch, 2002; Kortum & Lerner, 2000). The log-linear relationship then provides the interpretation of the coefficients as the elasticity of the mean innovation output with respect to the input (Equation 4.3).

$$\ln(\text{Innovation}_{it}) = \alpha + \ln(\text{Inputs}_{it}) + \text{Org Traits}_i + \text{Competition}_n + \text{Competition}_g + \varepsilon_{it} \quad (4.3)$$

¹¹ Intellectual property receipt was also examined, but the sample size was too small to analyze.

Equation 3 models the innovation produced by an organization, i , as a function of the organization's inputs and traits as well as the level of market competition within the organization's disease, n , and state, g . The error term represents an organization's innate innovative capacity.

4.5.1 Model Specifications

The key factor of interest for this analysis is the impact of competition on innovation. This impact is measured through four variables that capture the size and concentration of the market. Market size is measured by the number of organizations at the geographic level of state and the “industry” level of disease group. Disease group is classified by using the NTEE codes, which group organizations by their focus area, combining G (Specific Disease) & H (Medical Research) nonprofits so that all cancer organizations are grouped in one category, all autism organizations are grouped in another category, and so forth.

To address concentration, the four-organization market concentration ratio is used. This ratio measures the share held by the top four nonprofits. Here, total revenue was used to calculate the ratio. Feigenbaum (1987) uses the four-organization market concentration at the MSA level for her analysis. As discussed previously, research has shown the importance of geography in the creation of innovation as a consequence of the knowledge spillovers proximity produces (Audretsch & Feldman, 1996; Feldman, 1994). But given the types of organizations on which this work focuses, there is also a national market for these charities in terms of donation dollars, leading to an additional level of competition, captured here by an organization's focus area. As with the size variables, market concentration is measured in two variables, one at the state level (to capture geographic competition) and one at the disease group (following the NTEE codes to assess “industry” competition).

Table 4.4 shows the annual distribution of market share and size at the disease group level. Regarding market share, only allergy-related diseases (e.g., asthma) exhibit a high concentration (minimal competition), which has increased over time. The categories of digestive diseases and specifically named diseases (excluding AIDS, Alzheimer's, and autism) have moderate levels of concentration and competition, with minimal change in recent years. The vast majority of categories are competitive with low concentration levels. However, their rates of change are quite varied, ranging from a decrease of just 1% in the category of birth defects and genetic diseases to an increase of 165% in the category of specific organ diseases (e.g., diseases of the heart, lung, and brain) to become more concentrated.

Market size varies across concentration level. The allergy-related disease group has both a high market concentration and small market size, with 52 organizations. However, the Alzheimer's group also has a small market size (95 organizations) but has a low concentration (competitive) market. The groups for cancer, general purpose, medical disciplines, and specific organ diseases all have large market sizes, with more than 1,000 organizations and market shares ranging from low to moderate concentration. Autism organizations have seen the largest change in size, increasing by 27% since 2008.

Regarding geographic distribution, Appendix table 4.1 lists the annual distribution of market share and size by state for public charities with a *G* (Specific Disease) or *H* (Medical Research) NTEE major group. Most states have either a low or moderate concentration, but there are large variations in temporal changes, ranging from 1 to 170% increases and from 1 to 39% decreases. South Dakota, Maine, Arkansas, and North Dakota consistently have highly concentrated disease-specific charity markets. Less variation has occurred over time with respect to market size, with the largest increase of 20% in North Dakota and the largest decrease of 21% in Rhode Island. Only California and New York have more than 1,000 disease-specific organizations.

Beyond competition, the other inputs capture the organization's demographics, financial priorities, and approaches to mission. Organizational traits include age, size, and structure. Age of organization is measured by year of establishment. Size is measured by number of employees, while the number of high-paid employees (those making over \$100,000 a year) serves as a proxy for worker quality. Multiple variables address the organizational structure. National nonprofits with affiliates are captured through the presence of having supported organizations and making payments to affiliates. The model also includes the number of voting members in the governing body, whether the organization is a supporting or operating charity, and an indicator for the NTEE major code. A series of controls address the organization's other financial decisions and strategic approaches. Use of collaboration is measured through program-service-related conference, convention, and meeting expenditures. An indicator is included if the nonprofit is also a lobbying organization. Fundraising and advertising expenditures are also included.

The sample is pooled and a series of regressions are run to assess the impact of characteristics and behavior at the differential and marginal levels. First, logistic regressions are run for each outcome to assess which characteristics affect being a grantmaking organization, receiving any royalty revenue, or being a lobbying organization. A series of OLS regressions are then run on multiple subsamples for each outcome to estimate the production function and assess what affects the amount invested or received. All models use clustered robust standard errors to address serial correlation and heteroskedasticity. Models are clustered on the organization. Multicollinearity does not appear to be a concern, with a VIF under 3 for each model. An endogeneity concern arises with the grantmaking and lobbying investment outcomes and concurrent financial expenditures, so these control variables are lagged one time period. Since royalties are received after the commercialization of a product, current financial allocations do not affect concurrent receipt of royalty revenue. Thus, these models also lag expenditure variables.

4.5.2 Data and Sample

IRS Form 990 data are used to compare research-driven disease-specific charities to general health charities and to evaluate the innovation production function for the research-driven disease-specific charities. The data were obtained through NCCS and consist of the Statistics of Income (SOI) dataset for 2008–2010. The dataset contains observations for all of the public charities with more than \$30 million in assets and a representative sample of smaller organizations.¹² The IRS creates the SOI dataset annually, and each entry is input twice to reduce error. The dataset includes entries by tax period year, so that there are entries from 2008 to 2011. This timeframe contains the Great Recession that began in December 2007 and ended in June 2009. While this period is of concern for its periods of recession and recovery, it does provide perspective on organizational behavior in times of economic shock.

Table 4.5 presents the descriptive statistics by NTEE major group of health fields. Codes *E* and *F* consist of organizations focused on health care, and mental health and crisis intervention, while codes *G* and *H* are those used in the sample for analysis that contain disease-specific organizations focused on support and research. Differences exist across organization type, with general health care organizations (*E*) the largest in both employee count and financial measures of total revenue and expenditure.

Disease-specific organizations (*G* and *H*) differ from other health organizations in their research and advocacy work. More than half of the disease-specific organizations (*G* and *H*) make grants, while only 43% of health care organizations (*E*) and 14% of mental health organizations (*F*) make grants. Disease-specific organizations (*G* and *H*) also invest a larger dollar amount in their grantmaking activities than do other health grantmaking organizations. In addition, they receive royalty revenues at a higher rate: 22–23% of disease-specific organizations (*G* and *H*) report royalty

¹² See Appendix table 4.2 for comparison by state of the sample and population frequencies.

revenue, compared to 2–3% of other health organizations (*E* and *F*). These disease-specific charities (*G* and *H*) are also more likely to be lobbying than the other health organizations (*E* and *F*), with roughly a third of disease-specific organizations lobbying, compared to 23% of health care organizations (*E*) and 14% of mental health organizations (*F*).

Table 4.6 again shows the descriptive statistics, but in this case, they are divided by whether the organization lobbies and makes grants, only makes grants, only lobbies, or neither. The table presents the divide for the full sample of health-related organizations (*E*, *F*, *G*, & *H*) and the subsample of disease-specific organizations (*G* & *H*).

Within the full sample, specific disease organizations (*G*) represent a larger share of lobbying and grantmaking organizations (14%) than they do in all other categories (4–6%). Medical research organizations (*H*) represent only 4% of organizations that neither lobby nor make grants but have an 8–10% share of all other categories.

Organizations that lobby and make grants are much larger in total revenue and expenditures and in terms of number of employees. They are also more likely to be national organizations that support their affiliates, with 14% making payments, compared to 5–7% of other organizations. In addition, organizations that lobby and make grants are most likely to receive royalty revenues (16% compared to 2–9%), yet the amount is roughly the same share of total revenue as in other organizations (3–6%). However these organizations invest a smaller share in grant making (11% of total expenditures) than do organizations that do not lobby (46%).

Many of these differences are repeated in the subsample of disease-specific organizations (*G* and *H*). However, in this subsample, organizations that only lobby are most likely to receive royalty revenue, with half doing so, compared to 39% of those that lobby and make grants and 17% of those that only make grants. Organizations that lobby and make grants invest a higher dollar amount on average in both grantmaking and lobbying expenditures in this subsample of disease-specific

organizations than in the total sample of health-related organizations. Much of this increase in lobbying expenditures comes from a higher amount spent on grants to other organizations for lobbying.

4.6 Results

4.6.1 Results: Feigenbaum, Revisited

First, Feigenbaum's (1987) model is recreated with the newer and broader sample (table 4.7). Feigenbaum modeled the ratio of grant expenditures to total revenue as a function of the organization's age (year formed), size (total revenue), and MSA market share (four-organization market concentration) using weighted least squares with inverse total revenue weights. She estimated her model for medical research organizations only (*H NTEE* major group). Feigenbaum found a positive effect from revenue and a negative effect from age and market concentration. The model is evaluated against this sample of both *G* and *H* major *NTEE* codes and her restricted sample of only *H NTEE* major code organizations for both the total sample and for only grantmaking organizations. The results also show a negative effect of geographic market share using this model. While Feigenbaum's model is important to the development of this work, her model poses concerns as a result of under-specification of potential inputs and misspecification from including total revenue on both sides of the regression. As a result, it is unclear whether these results will hold when the production function model developed here is estimated.

4.6.2 Results: Characteristics of Grantmaking and Lobbying Organizations

The production of innovation is estimated through a series of outcomes and model stratifications. First, the differential affect is assessed for each outcome—what behavior is associated with making grants, royalty revenue, or lobbying. Table 4.8 presents the marginal effects resulting

from three logistic regressions on each binary outcome. Model 1 estimates the role of organizational characteristics and competition on whether an organization makes grants. The results show a small but positive association between market share in related-disease organizations (less competition) and making grants, in contrast to the results of Feigenbaum's model. At both the disease and geographic levels, market share is not statistically significant for the other outcomes of receiving royalty revenue or lobbying. Regarding market size, the number of disease organizations in the state is negatively associated with lobbying organizations: a one percent increase in the number of disease-specific charity in the state decreases the probability that an organization will lobby by 4.9 percentage points, on average.

However, other organizational characteristics exhibit a larger impact. Organizations with revenue of more than \$10 million or assets of more than \$30 million exhibit a higher probability of making grants by 12.6 percentage points and are more likely to receive royalty revenue by 12.4 percentage points, on average. This cutoff is used following the IRS SOI dataset, which uses a cutoff of \$30 million in assets to signal large nonprofits. In this sample, the median asset size is slightly lower, at \$26.4 million. However, some nonprofits spend out their revenue each year and carry over nothing in assets as part of their mission or structure. To adjust for this approach, organizations with more than \$10 million in revenue, the median total revenue in this sample, are also included as large organizations.

For large organizations, the presence of supporting affiliates had a positive effect on making grants and lobbying, by 15.7 and 11.1 percentage points on average, respectively, but a negative effect of 16.3 percentage points on receiving royalty revenue, on average. This finding may signal that large organizations with dependent affiliates invest but cannot necessarily do so in a way that effectively produces commercial results. Size also affects these outcomes through employees. Having more employees has a negative effect on the probability of making grants and on receiving

royalty revenue, but having more high-paid employees positively affects all three outcomes, so labor quality appears to benefit innovative investments and returns.

Also of note is the overlap between grantmaking and lobbying organizations. Being a lobbying organization increases the probability that an organization will make grants by 19.7 percentage points, on average. Similarly, making grants positively affects the probability that an organization will lobby by 13.6 percentage points, on average. In summary, on the extensive margin, organizational characteristics of size and structure affect the use of innovative strategies.

4.6.3 Results: Grantmaking Investment

Following the results of the logistic regressions, the marginal effect is estimated for each outcome. For grantmaking investment, the innovation production function is estimated using OLS regressions of the size of the grant investment for all grantmaking organizations and on the subsample of large and small organizations using the cutoff of either revenue of more than \$10 million or assets of more than \$30 million. Table 4.9 presents the results.

For the total sample of grantmaking organizations (Model 1), the results show a positive effect of the related-disease organization market share on the size of the investment: a percentage point increase in the market share is associated with approximately a 4% increase in grant expenditures, on average. This figure increases to 5% when restricting the sample to large charities (Model 2). However, market share has no effect for small organizations (Model 3). In contrast, market size is statistically significant only for smaller organizations, with a 1% increase in the number of disease-specific public charities in the state associated with a 0.71% increase in the grant investment, on average.

Similar to the extensive analysis in table 8, increasing the overall number of employees negatively affects the size of the investment, but increasing the number of high-paid employees

positively affects grantmaking expenditures, with a 1% increase in the lagged number of high-paid employees associated with an increase of .72% in making grants overall and .87% in making grants for large organizations, on average. This finding signals the importance of labor quality.

In contrast to the logistic results, making payments to affiliates negatively affects the size of the grantmaking investment. Lagged advertising expenditures has a small negative impact, while lagged fundraising expenditures has a small positive impact for large organizations. This finding may mean that as organizations spend more to raise funds, they increase their revenue and push more money into making grants, while building a brand through advertising takes away from grantmaking activities. Smaller organizations differ in direction for many aspects; however, few of these inputs are statistically significant, likely as a consequence of the small sample size.

4.6.4 Results: Royalty Revenue

Looking to returns on investment, table 4.10 presents the results on the intensive margin of royalty revenue, applying the production function to the size of royalty revenues received. Because of small sample sizes, the function is estimated on the full sample (Model 1), the sample restricted to grantmaking organizations (Model 2), organizations that received at least some royalty revenue (Model 3), and grantmaking organizations that received at least some royalty revenue (Model 4). Due to a small sample size of small organizations, the model was not divided by size, highlighting the fact that large size is an important indicator of receiving royalty revenue.

As in the logit model for royalty revenue, neither type of market share or market size is statistically significant. Instead, organizational structure and size are the most important characteristics affecting the size of royalty revenue. Labor quality has the largest and most consistent effect across models, with a 1% increase in the lagged number of high-paid employees associated with an increase of 1.2–2.3% in royalty revenue, on average.

For models run on subsamples of those with at least some royalty revenue (Models 3 and 4), the lagged grant investment size negatively affects the size of royalty revenues received: given a nonzero amount of royalty revenue, increasing the lagged size of grantmaking expenditures by 1% decreases the amount of royalty revenue received by 0.09–0.17%, on average.

While the small sample sizes are likely influencing these weaker findings, the limited time frame is a more serious offender. Given that the drug-development process takes an average of a decade, the previous year's efforts are not likely to affect the receipt of royalty revenue. Thus, a longer time frame with additional lags is needed to properly analyze the factors that affect royalty revenues. However, this analysis of royalty revenue highlights potentially important variables for future analysis.

4.6.5 Results: Lobbying Expenditures

Finally, the innovation production function is applied to the outcomes related to lobbying expenditures. Lobbying expenditures captures another innovation strategy pursued by nonprofits. Organizations advocate on behalf of their cause using their limited resources to draw support from larger institutions that may be more able and effective at research. Lobbying could lead to larger investments in research by federal agencies than individual charities can provide. This advocacy work thus serves as an alternate innovative outcome for public charities. Table 4.11 presents the results for this outcome by total lobbying expenditures (Model 1), own lobbying expenditures (Model 2), direct lobbying expenditures to contact legislators (Model 3), and lobbying expenditures in the form of grants to other organizations for lobbying purposes (Model 4). The sample size was too small to run additional estimations on subsamples by size.

Model 4 (grants to other organizations for lobbying) has the weakest effects. This finding is not surprising, however, as this approach represents the most indirect means of lobbying and thus is

a less distinctive strategy. Model 3 (direct expenditures to contact legislators) is the most direct method and has the strongest results. While market share has no effect, market size has strong negative effects for both related-disease organizations and state organizations, with a 1% change in the number of organizations in related diseases associated with an average decrease in direct contact expenditures of 1.6%, and a 1% change in the number of disease-specific charities in the state associated with an average decrease in direct contact expenditures of 1.8%. These results point to the lack of collaboration across organizations, since increases in the number of potential competitors or collaborators result in decreases in expenditures toward mission; thus, organizations are diverting expenditures to other areas when in larger markets. With overall lobbying expenditures (Model 1), market size at the state level has a similar negative effect of a 1.7% decrease for a 1% increase in size, on average. Market share does not significantly affect any type of lobbying expenditure.

Regarding labor and labor quality, Model 3 exhibits similar effects as in grantmaking investments and royalty revenue, with a 1% increase in lagged employment associated with a decrease of 1.02% in direct contact expenditures but a 1% increase in the lagged number of high-paid employees associated with a 1.65% increase in direct contact expenditures. In Model 2 (own lobbying expenditures), the number of high-paid employees surprisingly has a negative effect.

A divergent effect also exists between Models 2 and 3 on the role of grantmaking expenditures: a 1% increase in lagged grantmaking expenditures is associated with an increase of .18% for own lobbying expenditures but is associated with a decrease of .15% for direct contact expenditures. These differences indicate that type of lobbying in which an organization engages is affected by the organization's structure and strategies for reaching its mission.

4.7 Discussion

This paper expands the discussion and theory on nonprofit competition through the development and evaluation of the factors that affect innovation in the face of evolving philanthropic practices.

Paths to Innovation

The empirical model uses three outcomes that signal innovative activity: grantmaking investment, royalty revenue, and various forms of lobbying expenditures. These outcomes capture different approaches nonprofits employ to reach their goal of curing and treating disease. The size of grantmaking expenditures shows the size of the investments nonprofits make to fund researchers who will, in turn, work to find cures and treatments. Royalty revenue serves as a proxy for the success of that indirect path, with successful previous investments returning to the nonprofit when an innovation is commercialized. Lobbying expenditures show a different indirect approach—advocating for the cause to other agencies and organizations that can provide more high-quality support for the goal. While significant overlap exists between grantmaking and lobbying organizations, some disease-specific charities only make grants or only lobby, and they use different strategies and structures to reach the same goal.

Market share appears to influence the production function only on the outcome of grantmaking expenditures. The results from the grantmaking investment models indicate a positive effect of related-disease organization market share on investment, meaning that for large organizations, a more concentrated market (less competition) increases an organization's investment in grants. While this finding initially causes concern, given the positive effect competition is suspected to have on for-profits' production of innovation, the market for nonprofits differs, and competition can also mean more money for other expenditures, like fundraising costs, advertising, and salaries. In a highly competitive environment, organizations likely are spending inefficient

amounts on these other outlays, at the expense of research investments. Thus, a more concentrated market likely gives the large nonprofits a substantial brand power that allows them to spend less in the other areas and pour more money into making grants. Further, collaboration benefits may arise from this concentration. Given the push toward collaboration among nonprofits, evidence shows that these organizations are working with other nonprofits to avoid waste by specializing their efforts.

The weaker results from the royalty revenue likely result from the small sample size and lack of sufficient lags. A longer time period is needed to assess the role of competition on the commercialization of innovation. The results on the lobbying expenditure models show a negative effect of market size, implying that lobbying organizations are not collaborating and instead are spending more on other outlays when in larger markets. In both the royalty and lobbying models, the amount spent on making grants shows a negative impact. While this finding makes sense for lobbying, which is another expenditure, it implies that for royalty revenue, more spending does not equate to more results: that is, quality matters.

This implication is supported by the consistent positive impact of high-paid employees on all of the innovative outcomes. Labor quality (as measured using high-paid employees as a proxy) increases grantmaking investments, royalty revenues, and direct contact lobbying expenditures. Organizations that invest in their employees are also investing more in paths to innovation through making grants and lobbying, and they are reaping the benefits through higher amounts of royalty revenue.

A longer time period will allow for additional lags and it will also provide the ability to estimate the production function at different time intervals to compare estimates during this time of economic recession and recovery to periods of greater economic stability. The production function should also be evaluated at the disease level to assess more finely the stages of progress toward

innovation and the role of multiple organizations. In addition, the state market share was not significant for any outcome, but this geographic level may be too broad. Geographic competition needs to be examined on a more micro level, such as MSA.

The Market of Disease-Specific Charities

Roughly one-fifth of nonprofits were formed after 2001 (Pettijohn, 2013). Nonprofits contribute approximately 6% of the US GDP (Pettijohn, 2013). However, a few large organizations make up most of this share: 4.4% of public charities account for 86% of total public charity expenditures, while 40% account for less than 1% of the total (Pettijohn, 2013). The recent growth in nonprofit organizations and the relative power of the large organizations has prompted questions regarding efficiency and effectiveness in the sector. The results from this analysis indicate that large organizations effectively navigate through these larger markets to invest more toward innovation. While small organizations also invest in research and lobbying and receive royalty revenue, what role competition plays for them is unclear. With the number of small nonprofits growing, their approach should be examined with a larger sample to see how they compete and collaborate with larger nonprofits and how they are creating innovation relative to larger organizations.

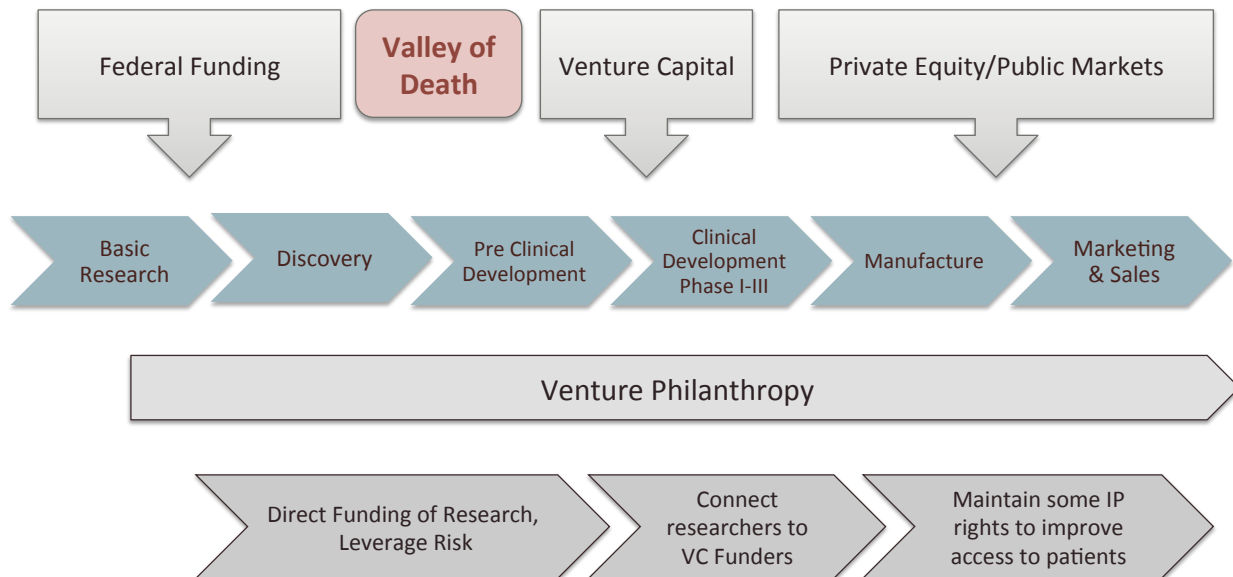
Also, given that these nonprofits increasingly seek commercial returns through investment in for-profit firms, the regulation and expectations of nonprofits should be adapted to this more involved cross-sector funding strategy. A two-way relationship exists between Pharma firms and nonprofits, with nonprofits receiving financial benefit and firms receiving marketing and public appeal benefits. There is concern that the tax-advantaged nonprofits are at risk of subsidizing for-profit firms (Paluzzi, 2012). As both nonprofits and for-profits work to generate public goods through the production of treatments and therapies, more conversation is needed on how their interaction may affect their respective tax policies.

Finally, given the finding that market share is positively linked to innovative progress in grantmaking investment, greater attention is needed to the role of specialization so that we can better understand how these organizations are cooperating in the concentrated markets to produce results as well as how significant the results are. As Boulding (1962) points out, there are no antitrust laws for nonprofits, so these large organizations wield great political and economic power. Though they do seem to be investing more in grants as a result of this power, further examination of the consequences of this concentration is needed, and longer-term outcomes must be studied to see if these organizations are wielding their power effectively.

This paper contributes to the nonprofit literature by developing the first innovation production function for disease-specific charities and empirically testing the model to examine the effect of competition and organizational characteristics through three innovative outcomes. The paper also contributes the research & development literature by exploring the nonprofits' expanding role in the drug-development pipeline. The results indicate that market share and size matter, as do strategy and structure. With proper measurement and analysis, nonprofits can adapt and improve how they approach their goals.

Figures

Figure 4.1: Drug Development Pipeline with Funding Sources



Source: Adapted from Feldman & Graddy-Reed, 2014

Tables

Table 4.1: Health-Oriented Public Charities

NTEE Classification	Registered PCs	990 Filing PCs	Total Revenue	Assets
As of June 2014				
E - Health Care	34,208	22,748	\$ 924,033,960,081	\$ 1,215,806,100,189
F - Mental Health & Crisis Intervention	13,926	8,354	\$ 29,438,033,025	\$ 24,535,079,212
G - Voluntary Health Associations & Medical Disciplines	18,838	8,710	\$ 14,879,035,416	\$ 18,944,453,398
H - Medical Research: Medical Research	3,375	2,166	\$ 10,345,447,117	\$ 41,025,430,785
All Health Registered Public Charities	70,347	41,978	\$ 978,696,475,639	\$ 1,300,311,063,584
All Registered Public Charities	964,497	354,742	\$ 1,697,092,622,181	\$ 3,072,216,427,411
As of December 2004				
E - Health Care	34,786	21,540	\$ 574,457,580,070	\$ 687,008,228,721
F - Mental Health & Crisis Intervention	15,218	8,464	\$ 22,867,823,385	\$ 17,189,851,495
G - Voluntary Health Associations & Medical Disciplines	16,530	6,704	\$ 10,826,727,949	\$ 13,734,650,512
H - Medical Research: Medical Research	3,305	1,989	\$ 7,828,822,586	\$ 30,068,046,150
All Health Registered Public Charities	69,839	38,697	\$ 615,980,953,990	\$ 748,000,776,878
All Registered Public Charities	822,810	292,664	\$ 1,063,181,360,577	\$ 1,877,814,599,343
Growth from 2004 to 2014				
E - Health Care	-1.66%	5.61%	60.85%	76.97%
F - Mental Health & Crisis Intervention	-8.49%	-1.30%	28.73%	42.73%
G - Voluntary Health Associations & Medical Disciplines	13.96%	29.92%	37.43%	37.93%
H - Medical Research: Medical Research	2.12%	8.90%	32.15%	36.44%
All Health Registered Public Charities	0.73%	8.48%	58.88%	73.84%
All Registered Public Charities	17.22%	21.21%	59.62%	63.61%

Registered PCs = Public charities registered with the IRS for operation as nonprofits

990 Filing PCs = Public charities registered with the IRS that file the annual Form 990

Data Source: Internal Revenue Service, Exempt Organizations Business Master Files (Jun 2014, Dec 2004); Urban Institute, National Center for Charitable Statistics, <http://nccsdataweb.urban.org>

Table 4.2: GEN's Top 20 Grantmaking Disease Nonprofits

Organization	% of Revenue Awarded as Grants	Amount of Research Grants Awarded
#1. Michael J. Fox Foundation	82.60%	\$ 53,858,000
#2. Juvenile Diabetes Research Foundation	57.00%	\$ 110,071,000
#3. Myelin Repair Foundation	53.90%	\$ 2,873,000
#4. Alzheimer's Drug Discovery Foundation	52.00%	\$ 5,522,000
#5. Parkinson's Disease Foundation	46.20%	\$ 4,750,000
#6. Melanoma Research Alliance Foundation	24.30%	\$ 5,104,000
#7. Leukemia and Lymphoma Society (LLS)	22.40%	\$ 68,398,000
#8. Muscular Dystrophy Association	21.70%	\$ 33,945,000
#9. ALS Association	18.40%	\$ 3,500,000
#10. American Heart Association	18.30%	\$ 116,872,000
#11. Cystic Fibrosis Foundation	17.90%	\$ 54,707,000
#12. National Multiple Sclerosis Society	16.40%	\$ 35,273,000
#13. American Diabetes Association	16.10%	\$ 33,588,000
#14. Susan G. Komen Breast Cancer Foundation	15.30%	\$ 60,931,000
#15. American Parkinson Disease Association	15.10%	\$ 1,293,000
#16. American Cancer Society	11.50%	\$ 106,882,000
#17 (tie) March of Dimes Foundation	11.10%	\$ 23,387,000
#17 (tie) American Liver Foundation	11.10%	\$ 947,759
#19. National Parkinson Foundation	9.80%	\$ 902,784
#20. Arthritis Foundation	8.80%	\$ 9,294,000
Total Awarded:		\$ 732,098,543

Data Source: *Genetic Engineering & Biotechnology News*, 2013

Table 4.3: Factors of Innovation for Disease-Specific Charities

Factors	Production Function Level		Predicted Sign	Theoretical or Empirical Citation	
	Disease	Organization		For-Profit	Nonprofit
Disease Characteristics					
Prevalence of the disease	x	x	(+)	Acemoglu & Linn 2003; Bhattacharya & Packalen 2008 (Market Size +)	Kahn Best 2012 (–)
Disease is associated with stigma	x	x	(–)		
Knowledge					
Existing internal & external knowledge (current technologies, drugs & therapies)	x	x	(+)	Feldman 1994; Feldman & Audretsch 1999 (+)	
Geographic proximity of researchers	x	x	(+)	Feldman 1994; Slavtchev & Fritsch 2005; Ponds et al. 2010; Feldman, et al. WFP (+)	
Inputs					
Industry, university, nonprofit, & public R&D expenditure	x	x	(+)	Feldman 1994; Kortum & Lerner 2000; Audretsch & Feldman 2004; Slavtchev & Fritsch 2005 (+)	Kahn Best 2012; Feldman & Graddy-Reed 2014 (+)
Lobbying power of nonprofit organization(s)	x	x	(+)	Teece 1992; Powell et al. 1996; Pober et al. 2001; Audretsch & Feldman 2004; Freel 2005; Kar 2010; Feldman et al. WFP (+)	Jaskyte & Lee 2006; Feldman & Graddy-Reed 2014 (+); Cohen 2012 (Specialization +)
Use of collaboration/cooperation (partnerships & conferences)	x	x	(+)	Freel 2005 (+)	
Labor quality of researchers/employees	x	x	(+)	Audretsch & Feldman 2004 (+)	Feldman & Graddy-Reed 2014 (+)
Organization's R&D expenditure	x	x	(+)		
Competition					
Market share compared to other diseases and within disease	x	x	(?)	Blundell et al. 1999 (Market Share +) Cohen & Levin 1989; Aghion et al. 2005 (Mix) Feldman & Audretsch 1999; Gilbert 2006 (Competition +)	Feldman & Graddy-Reed 2014 (Market Share +) Feigenbaum 1987 (Market Share –) Backus & Clifford 2012 (Mix) Cohen 2012 (Specialization +)
Number of nonprofits dedicated to disease	x	x	(?)		
Organizational Traits					
Organization Size	x	x	(?)	Feldman 1994; Audretsch & Vivarelli 1996; Blundell et al. 1999 (–) Cohen & Levin 1989 (Mix); Henderson & Cockburn 1996; Gilbert 2006 (+)	Boulding 1962 (–) Feigenbaum 1987 (+)
National nonprofit with affiliates operating as a unified organization (opposed to as independent organizations)	x	x	(?)		
Focus on specific mission of organization (opposed to broad)	x	x	(+)		McDonald 2007; Feldman & Graddy-Reed 2014 (+)
Age (Date of Establishment)	x	x	(–)		Feigenbaum 1987 (–)
Fundraising expenditures	x	x	(–)		Rose-Ackerman 1982 (–)
Marketing expenditures	x	x	(–)		Nickel & Eikenberry 2009 (–)

Source: Alexandra Graddy-Reed

Table 4.4: Related-Disease Organization Market Share & Size

Related-Disease Organization Market Share					
NTEE CC Group	2011	2010	2009	2008	% Change from 2008 to 2011
Low Concentration (Competitive)					
G & H 40s Diseases of Specific Organs	0.35	0.34	0.28	0.13	165%
G & H 90s Medical Disciplines	0.29	0.21	0.46	0.44	-35%
G & H 81 AIDS	0.25	0.23	0.22	0.21	22%
G & H 50s Nerve, Muscle, & Bone Diseases	0.31	0.31	0.31	0.26	19%
G & H 00s General*	0.27	0.26	0.36	0.33	-18%
G & H 84 Autism	0.31	0.31	0.36	0.35	-12%
G & H 30s Cancer	0.41	0.41	0.45	0.44	-7%
G & H 83 Alzheimer's Disease	0.39	0.40	0.42	0.41	-7%
G & H 20s Birth Defects & Genetic Diseases	0.24	0.24	0.24	0.24	-1%
Moderate Concentration					
G & H 70 Digestive Diseases & Disorders	0.54	0.53	0.55	0.58	-7%
G & H 80 Specifically Named Diseases	0.53	0.50	0.59	0.53	0%
High Concentration (Oligopolistic)					
G & H 60s Allergy-Related Diseases	0.85	0.86	0.77	0.75	13%

Related-Disease Organization Market Size					
NTEE CC Group	2011	2010	2009	2008	% Change from 2008 to 2011
Over 1,000 Organizations					
G & H 30s Cancer	1,552	1,559	1,492	1,430	9%
G & H 00s General*	1,666	1,664	1,620	1,557	7%
G & H 90s Medical Disciplines	1,833	1,895	1,870	1,877	-2%
G & H 40s Diseases of Specific Organs	2,398	2,472	2,488	2,412	-1%
100 - 1,000 Organizations					
G & H 84 Autism	417	419	384	328	27%
G & H 81 AIDS	649	706	711	719	-10%
G & H 50s Nerve, Muscle, & Bone Diseases	904	934	910	842	7%
G & H 70 Digestive Diseases & Disorders	228	235	230	215	6%
G & H 80 Specifically Named Diseases	611	621	616	604	1%
G & H 20s Birth Defects & Genetic Diseases	864	894	901	867	0%
Less than 100 Organizations					
G & H 60s Allergy-Related Diseases	52	52	54	58	-10%
G & H 83 Alzheimer's Disease	95	95	92	94	1%

*Includes organizations of: alliances, technical assistance, professional associations, research institutes, supporting, and fundraising

Note: Based on total revenue values of zero or more; Size based on count of organizations with more than zero in revenue

Source: Alexandra Graddy-Reed calculations using data from the Internal Revenue Service, Exempt Organizations Business Master File (501(c)(3) organizations, 2008–2011); Urban Institute, National Center for Charitable Statistics, <http://nccsdataweb.urban.org>

Table 4.5: Descriptive Statistics by Major NTEE Group

Variable	NTEE Major Group			
	E Health	F Mental Health	G Specific Diseases	H Medical Research
Year Formed	1978 (26.84)	1971 (28.20)	1973 (28.98)	1978 (25.41)
Number of Employees	434.5 (1405.4)	287.1 (409.7)	257.4 (584.9)	254.2 (593.1)
Employees Paid over \$100K	35.77 (163.5)	4.128 (6.637)	13.98 (34.54)	20.59 (67.08)
Share with Revenue > \$10 Million or Assets > \$30 Million	0.72	0.52	0.52	0.67
Total Revenue	86,946,205.8 (850954915.0)	19,419,896.2 (50936609.0)	36,912,642.8 (74535151.9)	43,179,354.7 (108984944.6)
Total Expenditures	85,728,697.9 (839849724.7)	19,395,397.0 (50761440.1)	36,453,024.3 (75802394.1)	44,917,569.3 (115256049.4)
Share Grantmaking	0.43	0.14	0.54	0.55
<i>If Grantmaking:</i>				
Share of Expenditures to Grants	0.37	0.17	0.25	0.42
Grants to Organizations	5,769,485.3 (20233082.7)	2,150,505.7 (6188861.7)	12,599,970.5 (28898825.1)	6,541,900.4 (13906571.9)
Share Receiving Royalty Revenue	0.03	0.02	0.22	0.23
<i>If Receiving Royalty Revenue:</i>				
Share of Revenues from Royalties	0.05	0.12	0.04	0.04
Royalty Revenues	5,469,300.7 (26982846.8)	203,861.2 (362693.5)	1,797,922.5 (3664289.6)	2,432,317.1 (6187313.9)
Share Receiving Intellectual Property	0.05	0.04	0.04	0.05
Share Lobbying	0.23	0.14	0.32	0.33
Share Collaborating	0.42	0.49	0.66	0.57
Share Making Payments to Affiliates	0.07	0.05	0.12	0.09
Share of Revenue from Government Grants	0.04	0.30	0.13	0.17
Observations	4,848	787	404	419
Mean (Standard Deviation) or Proportion reported; Sample excludes hospitals and schools				

Data Source: Internal Revenue Service, Statistics of Income Division, Exempt Organizations Sample (501c(3) Organizations, 2008–2010); Urban Institute, National Center for Charitable Statistics, <http://nccsdataweb.urban.org>

Table 4.6: Descriptive Statistics of Grantmaking & Lobbying Organizations

Variable	All Health-Related Organizations			
	(1) Lobby & Grantmaking	(2) Grantmaking Only	(3) Lobbying Only	(4) Neither
Year Formed	1973.5 (28.28)	1981.0 (22.75)	1970.4 (30.15)	1976.7 (28.24)
Number of Employees	1,242.6 (2669.7)	154.2 (548.0)	774.1 (1860.2)	240.9 (449.7)
Employees Paid over \$100K	115.8 (355.7)	16.26 (77.05)	38.70 (92.99)	13.83 (54.49)
Share with Revenue > \$10 Million or Assets > \$30 Million	0.93	0.66	0.84	0.59
Total Revenue	333,394,349.1 (2.07891e+09)	31,993,780.5 (96428420.5)	75,358,831.1 (141566417.1)	30,801,269.8 (96208635.9)
Total Expenditures	332,710,738.1 (2.05181e+09)	30,848,489.2 (91381952.0)	74,076,604.4 (135743474.5)	30,348,556.4 (96875482.4)
Share of Expenditures to Grants	0.11	0.46		
Grants to Organizaions	8,331,453.4 (27136602.5)	5,376,092.5 (16676631.2)		
Total Lobbying Expenditures	211,785.2 (1034216.8)		59,709.1 (141892.8)	
Grants to Other Organizations for Lobbying	72,479.7 (732384.0)		4,620.3 (45485.8)	
Expenditures on Direct Contact with Legislators	64,029.0 (225111.8)		29,146.4 (86444.3)	
Share Receiving Royalty Revenue	0.16	0.06	0.09	0.02
<i>If Receiving Royalty Revenue:</i>				
Share of Revenues from Royalties	0.04	0.06	0.03	0.06
Royalty Revenues	7,137,147.0 (30071651.9)	1,554,273.4 (6597845.2)	1,502,045.5 (2515490.0)	1,644,384.0 (3241262.6)
Share Receiving IP	0.07	0.05	0.05	0.04
Share Collaborating	0.74	0.34	0.63	0.42
Share of Total Expenditures on Fundraising	0.03	0.06	0.01	0.02
Share Making Payments to Affiliates	0.14	0.05	0.07	0.06
Share of Revenue from Government Grants	0.03	0.03	0.12	0.12
NTEE Major Group				
E - Health	0.72	0.82	0.77	0.71
F - Mental Health	0.04	0.04	0.11	0.19
G - Specific Diseases	0.14	0.06	0.04	0.05
H - Medical Research	0.10	0.08	0.08	0.04
Observations	788	1,874	688	3,080

Mean (Standard Deviation) or Proportion reported NTEE Major Groups E, F, G, & H included in columns 1-4

Variable	Disease-Specific Organizations			
	(5) Lobby & Grantmaking	(6) Grantmaking Only	(7) Lobbying Only	(8) Neither
Year Formed	1962.4 (29.12)	1982.8 (22.97)	1962.6 (28.63)	1981.8 (24.96)
Number of Employees	600.4 (898.1)	32.97 (73.58)	476.9 (544.4)	177.6 (496.3)
Employees Paid over \$100K	45.13 (96.21)	3.583 (8.138)	29.81 (42.93)	8.754 (31.58)
Share with Revenue > \$10 Million or Assets > \$30 Million	0.85	0.49	0.85	0.46
Total Revenue	92,439,468.1 (149908911.5)	13,346,027.3 (24500429.2)	63,983,183.6 (76464234.6)	24,566,853.9 (75958510.1)
Total Expenditures	99,363,835.2 (161942589.8)	12,451,150.4 (21382112.8)	60,257,359.2 (71448054.4)	23,979,307.9 (74645585.2)
Share of Expenditures to Grants	0.14	0.47		
Grants to Organizaions	14,906,366.1 (30884556.3)	5,305,569.7 (11604778.8)		
Total Lobbying Expenditures	367,030.4 (1485567.9)		68,881.9 (99771.5)	
Grants to Other Organizations for Lobbying	232,310.6 (1432255.4)		1,162.9 (7204.7)	
Expenditures on Direct Contact with Legislators	59,970.9 (159567.4)		54,411.8 (97197.5)	
Share Receiving Royalty Revenue	0.39	0.17	0.51	0.08
<i>If Receiving Royalty Revenue:</i>				
Share of Revenues from Royalties	0.03	0.07	0.03	0.04
Royalty Revenues	2,459,925.2 (4234141.5)	1,943,772.2 (8061045.3)	1,513,092.1 (2514154.1)	2,507,085.7 (4061234.8)
Share Receiving IP	0.03	0.06	0.05	0.04
Share Collaborating	0.9	0.44	0.74	0.55
Share of Total Expenditures on Fundraising	0.1	0.05	0.02	0.03
Share Making Payments to Affiliates	0.3	0.03	0.07	0.06
Share of Revenue from Government Grants	0.11	0.05	0.39	0.2
NTEE Major Group				
E - Health				
F - Mental Health				
G - Specific Diseases	0.58	0.44	0.31	0.55
H - Medical Research	0.42	0.56	0.69	0.45
Observations	183	266	85	289

Mean (Standard Deviation) or Proportion reported; NTEE Major Groups G & H included in columns 5-8

Data Source: Internal Revenue Service, Statistics of Income Division, Exempt Organizations Sample (501c(3) Organizations, 2008–2010); Urban Institute, National Center for Charitable Statistics, <http://nccsdataweb.urban.org>

Table 4.7: Regression Results—Feigenbaum's (1987) Model with Current Sample

	(1) Total Sample	(2) Total Sample	(3) Grantmaking Orgs	(4) Grantmaking Orgs
Geographic Market Share (%)	-0.983*** (0.107)	-0.701*** (0.0807)	-1.213*** (0.0943)	-0.957*** (0.107)
Year Formed	2.256*** (0.0981)	0.810*** (0.0611)	1.713*** (0.100)	1.231*** (0.104)
Total Revenue	3.77e-07* (2.28e-07)	-2.73e-08 (1.85e-07)	-2.39e-07 (2.60e-07)	-5.53e-08 (2.39e-07)
Constant	-4,436*** (196.0)	-1,571*** (122.2)	-3,328*** (200.6)	-2,387*** (209.4)
Observations	398	794	214	426
NTEE Major Group	H	G & H	H	G & H

WLS (inverse total revenue); Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Dependent Variable: Grant Expenditure Ratio to Total Revenue

(1) & (2) Analyze total sample, (3) & (4) analyze subsample of grantmaking organizations

Data Source: Internal Revenue Service, Statistics of Income Division, Exempt Organizations Sample (501c(3) Organizations, 2008–2010); Urban Institute, National Center for Charitable Statistics, <http://nccsdataweb.urban.org>

Table 4.8: Regression Results—Characteristics of Investors, Innovators, & Advocates

Variable	Form	(1) Grantmaking Org	(2) Royalty Revenue	(3) Lobbying Org
Related-Disease Organization Market Share	Percent	0.00406** (0.00201)	0.000103 (0.00225)	-0.000514 (0.00137)
Geographic Market Share	Percent	0.000548 (0.00162)	0.000459 (0.00133)	-0.000579 (0.00111)
Number of Related-Disease Organizations	Log	0.0134 (0.0514)	-0.0186 (0.0436)	-0.0393 (0.0302)
Number of NTEE G & H Public Charities in State	Log	-0.0106 (0.0318)	-0.0165 (0.0302)	-0.0486* (0.0281)
Share with Revenue > \$10 Million or Assets > \$30 Million	Binary	0.126** (0.0581)	0.124* (0.0718)	-0.00314 (0.0509)
Making Payments to Affiliates	Binary	0.157** (0.0783)	-0.163** (0.0698)	0.111** (0.0473)
Year Formed	Continuous	-0.00116 (0.00103)	-0.00192** (0.000824)	-0.00170*** (0.000606)
Number of Employees	Log	-0.114*** (0.0165)	-0.0547** (0.0216)	0.0119 (0.0176)
Employees Paid over \$100K	Log	0.0580* (0.0309)	0.116*** (0.0324)	0.0480** (0.0222)
Collaborating	Binary	0.0156 (0.0537)	0.0382 (0.0624)	0.0364 (0.0414)
Advertising Expenditures	Log	0.00616 (0.00496)	0.00823* (0.00483)	0.00384 (0.00328)
Fundraising Expenditures	Log	0.0176*** (0.00406)	-0.00128 (0.00524)	0.00922** (0.00359)
NTEE Code H - Medical Research (Referent: G)	Binary	-0.0373 (0.0534)	-0.0772 (0.0538)	0.0294 (0.0416)
Supporting Public Charity (Referent: Operating)	Binary	0.0534 (0.0696)	-0.0978 (0.0912)	-0.0870 (0.0784)
Lobbying Organization	Binary	0.197*** (0.0624)	-0.0169 (0.0613)	
Grantmaking Expenditures	Log		0.0151 (0.0133)	
Grantmaking Organization	Binary			0.136*** (0.0395)
Revenue from Government Grants	Log			0.00933*** (0.00263)
Receiving Royalty Revenue	Binary			0.0333 (0.0465)
Observations		823	449	823
Number of Clusters		346	205	346
Sample		Full Sample	Grantmaking Orgs	Full Sample

Logistic regressions, Marginal effects reported

Robust standard errors in parentheses; Clustered on EIN

*** p<0.01, ** p<0.05, * p<0.1

Data Source: Internal Revenue Service, Statistics of Income Division, Exempt Organizations Sample (501c(3) Organizations, 2008–2010); Urban Institute, National Center for Charitable Statistics, <http://nccsdataweb.urban.org>

Table 4.9: Regression Results—Size of Grantmaking Investment

Variable	Form	(1) Grantmaking Orgs	(2) Large Grantmaking Orgs	(3) Small Grantmaking Orgs
Related-Disease Organization Market Share	Percent	0.0413** (0.0165)	0.0506** (0.0197)	0.00696 (0.0296)
Geographic Market Share	Percent	0.00900 (0.00890)	0.0117 (0.0118)	0.00408 (0.0139)
Number of Related-Disease Organizations	Log	-0.0346 (0.229)	-0.158 (0.319)	0.333 (0.360)
Number of NTEE G & H Public Charities in State	Log	0.244 (0.184)	0.169 (0.247)	0.708* (0.386)
Making Payments to Affiliates	Binary	-1.413*** (0.484)	-1.390** (0.558)	-0.649 (1.070)
Number of Voting Members in Governing Body	Log	0.406* (0.220)	0.379 (0.300)	-0.0617 (0.414)
Year Formed	Continuous	0.00731 (0.00612)	0.0112 (0.00689)	-0.0175 (0.0130)
Number of Employees	Log, Lag 1	-0.530*** (0.154)	-0.702*** (0.184)	0.0508 (0.353)
Employees Paid over \$100K	Log, Lag 1	0.715*** (0.250)	0.870*** (0.286)	-0.703 (0.827)
Lobbying Organization	Binary	-0.187 (0.332)	-0.330 (0.377)	0.701 (0.770)
Collaboration Expenditures	Log, Lag 1	0.00200 (0.0362)	0.0263 (0.0458)	-0.0380 (0.0515)
Advertising Expenditures	Log, Lag 1	-0.0640** (0.0263)	-0.0820*** (0.0267)	0.0195 (0.0628)
Fundraising Expenditures	Log, Lag 1	0.0627** (0.0243)	0.0793*** (0.0277)	-0.0382 (0.0564)
Total Revenue	Log	0.749*** (0.110)	0.799*** (0.168)	0.568*** (0.164)
NTEE Code H - Medical Research (Referent: G)	Binary	0.305 (0.320)	0.0888 (0.398)	1.017* (0.570)
Supporting Public Charity (Referent: Operating)	Binary	1.228*** (0.357)	1.342*** (0.442)	1.063* (0.591)
Constant		-16.44 (12.66)	-23.55 (14.67)	32.35 (25.65)
Observations		270	184	86
Number of Clusters		168	109	63

Robust standard errors in parentheses; Clustered on EIN; Outcome: log of grantmaking expenditures

*** p<0.01, ** p<0.05, * p<0.1

Size distinction between large and small organizations based on cutoff of either revenue over 10 million or assets over 30 million

Data Source: Internal Revenue Service Statistics of Income Division Exempt Organizations Sample (501c(3) Organizations, 2008-2010); Urban Institute, National Center for Charitable Statistics, <http://nccsdataweb.urban.org>

Table 4.10: Regression Results—Size of Royalty Revenue

Variable	Form	(1) Full Sample	(2) Grantmaking Orgs	(3) Royalty Receipt	(4) Grantmaking with Royalties
Related-Disease Organization Market Share	Percent	-0.00457 (0.0281)	-0.00302 (0.0408)	-0.0137 (0.0269)	-0.0277 (0.0340)
Geographic Market Share	Percent	0.0153 (0.0161)	0.0109 (0.0214)	-0.0158 (0.0171)	0.00733 (0.0270)
Number of Related-Disease Organizations	Log	0.339 (0.536)	-0.327 (0.796)	0.0173 (1.070)	-0.240 (1.109)
Number of NTEE G & H Public Charities in State	Log	-0.259 (0.321)	-0.624 (0.439)	-0.463 (0.444)	-0.844 (0.735)
Making Payments to Affiliates	Binary	-2.985*** (0.900)	-3.010** (1.419)	0.116 (1.381)	0.515 (1.675)
Number of Voting Members in Governing Body	Log	-1.004** (0.467)	-1.841** (0.710)	-0.896 (0.598)	-1.641 (1.151)
Year Formed	Continuous	-0.0484*** (0.0118)	-0.0462*** (0.0157)	-0.0178 (0.0142)	-0.0382* (0.0199)
Number of Employees	Log, Lag 1	-0.496*** (0.181)	-0.561 (0.391)	-0.155 (0.364)	-0.274 (0.503)
Employees Paid over \$100K	Log, Lag 1	1.980*** (0.362)	2.339*** (0.584)	1.299*** (0.399)	1.173** (0.493)
Lobbying Organization	Binary	1.082 (0.822)	-0.355 (1.185)	0.0372 (0.696)	0.0176 (1.067)
Collaboration Expenditures	Log, Lag 1	0.125* (0.0640)	0.155* (0.0929)	-0.0204 (0.0674)	0.0217 (0.127)
Advertising Expenditures	Log, Lag 1	0.0733 (0.0592)	0.103 (0.0867)	0.0763 (0.0530)	0.0885 (0.0872)
Fundraising Expenditures	Log, Lag 1	0.0187 (0.0514)	0.0351 (0.0775)	-0.0597 (0.0557)	0.00484 (0.0887)
Expenditures on Grants to Organizations	Log, Lag 1	0.0364 (0.0399)	0.0593 (0.0694)	-0.0925* (0.0502)	-0.165* (0.0924)
Revenue from Government Grants	Log, Lag 1	0.0219 (0.0439)	0.0324 (0.0615)	-0.0550 (0.0497)	-0.0218 (0.0654)
NTEE Code H - Medical Research (Referent: G)	Binary	0.0286 (0.560)	-0.896 (0.795)	-0.274 (1.049)	0.0615 (1.415)
Supporting Public Charity (Referent: Operating)	Binary	-1.006* (0.596)	-1.098 (0.887)	-1.241 (1.313)	-0.381 (1.880)
Constant		96.92*** (24.94)	101.8*** (32.93)	52.50* (30.39)	98.65** (41.91)
Observations		497	277	122	79
Number of Clusters		293	169	69	45
Sample		Full Sample	Grantmaking	Full Sample	Grantmaking

Robust standard errors in parentheses; Clustered on EIN; Outcome: log of royalty revenue

*** p<0.01, ** p<0.05, * p<0.1

(3) and (4) restrict the sample to organizations with at least some royalty revenue

Data Source: Internal Revenue Service, Statistics of Income Division, Exempt Organizations Sample (501c(3) Organizations, 2008–2010); Urban Institute, National Center for Charitable Statistics, <http://nccsdataweb.urban.org>

Table 4.11: Regression Results—Size of Lobbying Expenditures

Variable	Form	(1) Total Lobbying Expenditures	(2) Own Lobbying Expenditures	(3) Direct Contact Expenditures	(4) Grants for Lobbying
Related-Disease Organization Market Share	Percent	0.000339 (0.0668)	-0.0371 (0.0673)	-0.00992 (0.0602)	0.00489 (0.0331)
Geographic Market Share	Percent	-0.00211 (0.0432)	-0.00805 (0.0415)	-0.00789 (0.0393)	0.0178 (0.0335)
Number of Related-Disease Organizations	Log	-1.416 (0.892)	1.254 (0.894)	-1.590* (0.862)	0.861 (0.530)
Number of NTEE G & H Public Charities in State	Log	-1.699** (0.796)	0.638 (0.799)	-1.816** (0.723)	-0.446 (0.654)
Making Payments to Affiliates	Binary	-2.165 (1.640)	2.165 (1.645)	-1.706 (1.438)	0.250 (1.338)
Number of Voting Members in Governing Body	Log	1.623 (1.141)	0.581 (0.960)	2.325** (1.119)	0.0892 (0.629)
Year Formed	Continuous	0.00881 (0.0226)	-0.0190 (0.0225)	0.0104 (0.0200)	0.00403 (0.0124)
Number of Employees	Log, Lag 1	-1.048 (0.677)	0.731 (0.653)	-1.023* (0.551)	-0.640 (0.464)
Employees Paid over \$100K	Log, Lag 1	2.433** (0.930)	-2.337** (0.964)	1.654** (0.770)	0.886 (0.630)
Collaboration Expenditures	Log, Lag 1	-0.0212 (0.121)	0.0242 (0.121)	0.0510 (0.118)	-0.0989 (0.0827)
Advertising Expenditures	Log, Lag 1	-0.115 (0.106)	0.148 (0.107)	-0.00325 (0.101)	0.126** (0.0510)
Fundraising Expenditures	Log, Lag 1	0.110 (0.118)	-0.0327 (0.113)	0.0881 (0.128)	0.0673 (0.0832)
Expenditures on Grants to Organizations	Log, Lag 1	-0.117 (0.0816)	0.176** (0.0776)	-0.150* (0.0787)	0.0394 (0.0486)
Receiving Royalty Revenue	Binary	0.462 (1.350)	-0.602 (1.309)	1.653 (1.349)	-0.796 (0.769)
Total Revenue	Log	-0.414 (0.606)	0.708 (0.669)	-0.537 (0.551)	0.110 (0.297)
NTEE Code H - Medical Research (Referent: G)	Binary	-0.00410 (1.241)	-1.029 (1.245)	-0.0281 (1.150)	-0.357 (0.753)
Supporting Public Charity (Referent: Operating)	Binary	3.492 (2.864)	-0.848 (3.400)	4.354 (2.649)	-2.228 (1.354)
Constant		11.39 (48.62)	17.06 (49.93)	9.359 (41.23)	-12.97 (25.78)
Observations		172	172	172	172
Number of Clusters		99	99	99	99

Robust standard errors in parentheses; Clustered on EIN; Outcome: log of lobbying expenditures

*** p<0.01, ** p<0.05, * p<0.1

Data Source: Internal Revenue Service, Statistics of Income Division, Exempt Organizations Sample (501c(3) Organizations, 2008–2010); Urban Institute, National Center for Charitable Statistics, <http://nccsdataweb.urban.org>

CHAPTER FIVE: CONCLUSIONS AND POLICY RECOMMENDATION

This dissertation aims to address variation in the private provision of public goods that crosses over traditional boundaries. For-profits, nonprofits, and hybrid organizations are engaging in innovative practices to better provide for the common good. While their goal is valiant, it is often unclear how their new strategies compare to traditional approaches. The dissertation contributes to the literature on nonprofit organizations and public goods by building datasets that provide detailed multi-dimensional data on nonprofits, their strategies, and their practices. The theories regarding philanthropic organizational practices are developed and analyzed to empirically document variation not captured by legal structure.

4.1 Stepping Up: An empirical analysis of the role of social innovation in response to an economic recession

Chapter two documents the practices in place by organizations to improve their local communities, while highlighting the value of new hybrid legal structures. In regards to the recession, the study finds that many organizations did respond to the increase in need by increasing social supports, showing the importance of the local safety net to communities. The paper contributes to the literature on social innovation by documenting the paths to social progress and the organizational characteristics associated with socially engaged practices.

Recommendations

More terms are being created and used to identify hybrid behavior. However, these terms lack consistent definitions and have not diffused to rural communities, making them ineffective

tools in linking organizations to resources. Support organizations should instead focus on identifying and connecting organizations through like practices. Hybrid supporters need to move away from marketing their preferred brand of terminology and instead focus on providing support for organizations to incorporate socially innovative practices. Regarding policy, the results suggest that self-selection into hybrid legal structures is appropriate, with hybrid entities providing a more extensive set of practices in support of their communities. This work supports the continued adoption of hybrid tax statuses. These incorporations offer a low-cost option for states to support and encourage the provision of social support from private organizations.

4.2 What's in a Name? Disambiguating philanthropic grantmakers and their strategies

The third chapter puts forth a classification model of grantmaking nonprofit organizations by funding source and funding strategy. The model allows for consideration of how revenue streams and organizational mission affect grantmaking outcomes. The results show that endowed and donation-based focused nonprofits behave similarly in terms of their total giving, but endowed nonprofits are providing larger grants to recipients, on average. Regarding the recession, results indicate that total giving did decrease; yet grant sizes maintained similar levels with focused organizations providing more in grantmaking than their general counterparts. The results suggest there are important distinctions in how these groups operationalize their mission, given revenue constraints. This paper contributes to the literature on grantmaking nonprofits by putting forth a generalizable classification system to better assess nonprofit practices and outcomes.

Recommendations

These results suggest important recommendations for both nonprofit managers and policymakers. Strategic grantmaking pushes the importance of sufficient funding to help grantees meet their goals. However, the smaller grant sizes from donation-based focused organizations, as

compared to endowed focused nonprofits, indicates they are not operationalizing this value as well. Nonprofit managers of each organization type need to better assess whether their grant sizes are sufficient to meet their desired goals from grantees.

Regarding policy, the government currently focuses regulation and evaluation efforts on public charities, ignoring the behavior of private foundations, which are also publicly subsidized. Policymakers need to adjust to better track the operations of private foundations so that the public has a greater understanding of how government is investing in the public good. In addition, policymakers and nonprofit managers need to tackle evaluation. While public goods are challenging to quantify, there are options for assessing outcomes. Grants and organizations need to be evaluated to assess how they are contributing to the social good and where improvements can be made.

4.3 The Race for a Cure: Collaborators or Competitors? Modeling the effects of competition in disease-specific charities

Chapter four expands the theory of nonprofit competition and innovation by developing and estimating an innovation production function for disease-specific nonprofits. The empirical model estimates the function on outcomes of grantmaking investment, royalty revenue, and lobbying expenditures. The results capture the importance of certain organizational characteristics across outcomes, namely labor quality. The result indicates that nonprofits that are investing in high quality employees are also investing more in the paths to innovation. Competition affects grantmaking behavior such that larger organizations in less competitive markets have a larger grantmaking investment. This can either imply that these organizations need to spend less on other expenditures like fundraising and marketing, or that they are collaborating with fellow nonprofits within the smaller markets. This paper contributes to the literature on nonprofit markets by developing and estimating the first innovation production function for disease-specific nonprofits.

Recommendations

The results from this paper that while there are some similarities, the markets of nonprofits and for-profits differ in important ways. Nonprofits are public good maximizers as opposed to profit maximizers. Thus, despite the importance of revenue generation for both types, nonprofits also need to focus on how money is spent. In an effort to limit other expenditures, like fundraising and marketing, charities should make efforts to connect with similar organizations and establish collaborative efforts and even potentially mergers that could result in more and more effective dollars going towards public goods.

The effectiveness of larger nonprofits also points to the role of policymakers. The low-barriers to entry in the nonprofit market have led to a flooding the market for most diseases. As a result, a large number of small organizations are competing for and receiving a portion of the limited donation and grant dollars. The public would benefit from greater control of nonprofit creation, reducing inefficiencies in fundraising and marketing expenditures by organizations and decreasing the information asymmetry that exists for potential donors trying to assess the quality of nonprofits. Limiting the supply also calls for the need of greater oversight from the public sphere of these charities given that the large nonprofits wield large amounts of political and economic power.

4.4 Plans for Future Research

Each of the three topics explored in this dissertation offer paths for future research. Regarding social innovation within hybrid organizations, more research is needed to expand the sample and geographical focus of study. A follow-up study within North Carolina has been conducted (in the fall of 2014). Data from the expanded survey will be analyzed to assess if results hold further out from the recession and across industry types. Research will also be done at a larger

geographical scale to assess how hybrids organizations are operationalizing their goals across the country.

Turning to social innovation within grantmaking organizations, the classification model put forth and assessed in chapter three should be applied to a larger sample of organizations, and behavior analyzed over a more stable economic time period to assess where and how focused and general interest nonprofits provide for the public good. Further work needs to be done on the outcomes of these organizations with a study on evaluation of grantmaking practices within the classification scheme.

Finally, regarding the innovation production function for disease-specific nonprofits, a longer time period needs to be analyzed to better model the longer-term outcome of royalty revenue and address behavior under stable economic conditions. The production function should also be evaluated at the disease level to assess the stages of progress toward innovation and how nonprofits interact within a disease market.

In sum, this dissertation contributes to the literatures on nonprofit organizations and public goods by expanding our understanding of how organizations operationalize their goals of public good provision across strategies and types of practices. It documents variation in behavior not captured in traditional legal boundaries and assess the organizational characteristics associated with greater social engagement. Future work will expand on these models to evaluate how these varying strategies impact public good outcomes. The value of third sector is well established – now efforts need to be evaluated so they may be improved to become more efficient and effective providers.

APPENDIX

Appendix 2.1 List of Practices in Use by Legal Structure and Hybrid Terminology Sub-Samples

VARIABLES	Total N = 556	Nonprofit or Hybrid N = 124	For-Profit N = 432	Hybrid ID Term N = 246	Term Not Used N = 287	
Environmental Practices						
Recycle	0.94	0.96	0.93	0.96	0.91	
Conserve water	0.57	0.63	0.55	0.66	0.48	***
Save energy	0.76	0.77	0.76	0.80	0.73	
Provide a product or service that benefits the environment	0.45	0.40	0.47	0.55	0.35	***
Track emissions	0.22	0.09	0.27	0.23	0.22	
Actively engage in toxic substance reduction, pollution prevention and/or remediation	0.46	0.32	0.50	0.49	0.43	
Use clean and/or low emission transportation	0.30	0.32	0.29	0.40	0.20	***
Purchase renewable energy and/or clean fuels	0.16	0.12	0.17	0.19	0.12	**
Produce renewable energy on-site	0.13	0.09	0.14	0.18	0.08	**
Purchase carbon offsets	0.05	0.05	0.05	0.08	0.02	**
Other practices in place	0.03	0.06	0.02	0.05	0.01	*
Community Practices						
Favor local suppliers	0.85	0.88	0.84	0.89	0.81	*
Favor suppliers with good social/environmental practices	0.63	0.71	0.60	0.74	0.51	***
Change suppliers for ones with better social/environmental practices	0.36	0.49	0.32	0.48	0.22	***
Provide services for special populations	0.31	0.64	0.21	0.40	0.21	***
Have a company service day	0.27	0.37	0.24	0.35	0.20	*
Donate use of your facilities	0.58	0.81	0.50	0.65	0.50	*
Donate a share of profits/revenue to local charities	0.44	0.28	0.50	0.48	0.41	
Sponsor programs to promote health	0.56	0.59	0.55	0.60	0.53	
Support K-12 education	0.52	0.49	0.53	0.50	0.56	
Support higher education	0.49	0.38	0.52	0.52	0.47	
Promote economic equality	0.48	0.67	0.42	0.57	0.39	***
Provide financing for community enterprises	0.25	0.22	0.26	0.30	0.22	
Other practices in place	0.03	0.07	0.02	0.05	0.02	*
Employee Practices						
Provide vacation and/or sick leave	0.91	0.91	0.91	0.89	0.93	
Contribute to employee retirement plan	0.61	0.68	0.58	0.56	0.65	*
Pay a portion of health insurance costs for all full-time employees	0.82	0.88	0.80	0.80	0.84	
Pay a portion of disability insurance costs for all full-time employees	0.57	0.66	0.55	0.59	0.55	
Offer to pay for employee education	0.51	0.50	0.52	0.55	0.48	
Offer to pay for employee development/training	0.81	0.86	0.80	0.83	0.79	
Provide on-site job training	0.87	0.82	0.89	0.87	0.89	
Offer paid maternity leave	0.49	0.59	0.46	0.50	0.48	
Offer paid time off for employees to volunteer	0.33	0.43	0.29	0.40	0.26	**
Offer profit-sharing	0.36	0.09	0.45	0.36	0.38	
Employ special populations	0.25	0.35	0.21	0.34	0.15	***
Include employees in decision-making	0.89	0.93	0.88	0.91	0.88	
Other practices in place	0.02	0.01	0.02	0.01	0.02	

Proportions reported; PR-test results significance levels: * p<0.05, ** p<0.01, *** p<0.001

Appendix 3.1 List of Words Used from Mission Statements and Grant Descriptions

Mission Statement Codes Used	
Variable	Search Word(s)
collaboration	collaborat
cooperation	cooperat
decrease duplication	decrease duplication
efficient	efficiently
evaluation	evaluat
expected return	expected return
impact	impact
Innovation	innovat/inventively
lasting	lasting
long-term	long-term
measure	measur
mission-driven	mission-driven
outcome	outcome
partnership	partnership
PRI	related investment
return on investment	return on investment
social enterprises	social enterprises
social entrepreneurs	social entrepreneurs
social innovation	social innovation
strategic	strategic
sustainable	sustain
venture philanthropy	venture philanthropy

Grant Description Codes Used in Analysis

VARIABLE	ROOT WORD(S)	CATEGORY	SUB-CATEGORY
Air	air	Agriculture	Environment
Bodies of water	ocean; sea; river; marine	Agriculture	Environment
Climate change	climate change; climate action; climate initiative; climate resilience; global warming	Agriculture	Environment
Conservation	conservation; land reclamation; land use	Agriculture	Environment
Environment	policies; land restoration; coastal protection	Agriculture	Environment
Forest	environment; nature; eco	Agriculture	Environment
Greenhouse gas	forest; tree	Agriculture	Environment
Pollution	greenhouse gas	Agriculture	Environment
Waste prevention	pollution; emissions	Agriculture	Environment
	waste prevention; recycle	Agriculture	Environment
Art	art; sculpture; studio	Arts & Culture	Arts & Culture
Museum	museum; exhibit; archive; gallery	Arts & Culture	Arts & Culture
Cultural/ethnic	ethnic; cultur	Arts & Culture	Arts & Culture
Historic preservation	historic; preservation	Arts & Culture	Arts & Culture
Dance	ballet; dance	Arts & Culture	Arts & Culture
Music	choir; music; concert; orchestra; symphony	Arts & Culture	Arts & Culture
Performing arts	perform; opera; playhouse; theater; theatre; actor; film	Arts & Culture	Arts & Culture
Clinics	free clinic; clinic service	Health	Care
Health	health	Health	Care
Hospice	hospice; palliative care	Health	Care
Hospitals	hospital	Health	Care
Insurance	insurance; underinsured; uninsured	Health	Care
Medical	medical	Health	Care
Medicine	medicine	Health	Care
Nutrition	nutrition	Health	Care
Patient	patient	Health	Care
Pediatric	pediatric	Health	Care
Personalized medicine	personalized medicine	Health	Care
Prescription drugs	prescription drug	Health	Care
Primary care	primary care	Health	Care
Public health	public health	Health	Care

Reproductive Therapy	reproductive therapy	Health Health	Care Care
Addiction	addict; substance abuse	Health	Condition
Alcoholism	alcoholism; alcoholic	Health	Condition
Arthritis	arthritis	Health	Condition
Asthma	asthma	Health	Condition
Autism	autism; autistic	Health	Condition
Dementia	dementia	Health	Condition
Diabetes	diabetes; diabetic; insulin	Health	Condition
Diagnosis	diagnosis	Health	Condition
Digestive	digestive	Health	Condition
Disabilities	disabilit	Health	Condition
Disorder	disorder	Health	Condition
Dyslexia	dyslexia	Health	Condition
Mentally disabled	mentally disabled; mental disabilit; developmentally disabled	Health	Condition
Obesity	obesity	Health	Condition
Paralysis	paralysis	Health	Condition
Rehab	rehab; detox	Health	Condition
Respiratory	respiratory	Health	Condition
ALS	als	Health	Disease
Alzheimer's	alzheimer	Health	Disease
Autoimmune	autoimmune	Health	Disease
Brain	brain	Health	Disease
Breast	breast	Health	Disease
Cancer	cancer	Health	Disease
Cystic fibrosis	cystic fibrosis	Health	Disease
Diseases	disease	Health	Disease
Genetic	genetic	Health	Disease
Heart	heart	Health	Disease
Hemophilia	hemophilia	Health	Disease
HIV/AIDS	aids; hiv	Health	Disease
Hypertension	hypertension	Health	Disease
Kidney	kidney	Health	Disease
Liver	liver	Health	Disease
Lung	lung	Health	Disease
Mental health	mental health; mentally ill; mental illness; depression	Health	Disease
Multiple Sclerosis	multiple sclerosis	Health	Disease
Muscular Dystrophy	muscular dystrophy	Health	Disease
Nerve, muscle, & bone disease	nerve; muscle; bone	Health	Disease
Parkinsons	parkinson	Health	Disease
Prostate	prostate	Health	Disease
Biomedicine	biomedicine; biomedical	Health	Education
Gerontology	gerontology	Health	Education

Immunology	immunology	Health	Education
Neuroscience	neuroscience	Health	Education
Oncology	oncology	Health	Education
Microcredit	microcredit; microenterprise; microentrepreneurship; microfinance	Social	Social
PRI	program-related investment; program-related loan; mission-related investment; mission-related loan	Innovation	Innovation
Social enterprises/entrepreneurs	social enterprise; social entrepreneur	Social	Social
Social innovation	social innovation	Innovation	Innovation
Social ventures	Social venture	Social	Social
Analysis	analysis; analytic; analyze; analyzing	Innovation	Innovation
Assessment	assess	Type of Support	Research
Basic research	basic research	Type of Support	Research
Biology-related research elements	bacteria; cell; enzyme; protein; biosynthesis; nuclear	Type of Support	Research
Case studies	case stud	Type of Support	Research
Clinical trials	clinical trial	Type of Support	Research
Data	data	Type of Support	Research
Donor registry	donor registry	Type of Support	Research
Drug discovery	drug discovery	Type of Support	Research
Econometrics	econometric; statistical methods	Type of Support	Research
Evidence-based	evidence-based	Type of Support	Research
Experimentation	experiment	Type of Support	Research
FDA approval	fda approval	Type of Support	Research
Feasibility	feasibility	Type of Support	Research
Genomics	genomics	Type of Support	Research
Instrument	instrument	Type of Support	Research

Interactions	interactions	Type of Support	Research
Intervention	intervention	Type of Support	Research
Laboratory	lab	Type of Support	Research
Methodology	methodology	Type of Support	Research
Monitoring	monitoring	Type of Support	Research
Phases	phase I; phase II; phase III; phase 1; phase 2; phase 3	Type of Support	Research
Pilot study	pilot study	Type of Support	Research
Placebo-controlled	placebo-controlled	Type of Support	Research
Proof-of concept	proof-of concept	Type of Support	Research
Recruitment	recruitment; reduce the drop-out rate	Type of Support	Research
Replicate	replicate; reproducible	Type of Support	Research
Research	research; R&D	Type of Support	Research
Research tools	microscope; telescope; mice; imaging	Type of Support	Research
Translational	translational	Type of Support	Research
Treatment	treatment	Type of Support	Research

Appendix 3.2 Comparison of Classification System to Restricted Version

Classification System	Restricted System				
	Donation Focused	Donation Broad	Endowed Focused	Endowed Broad	Unclassified
Donation Focused	85	68	0	0	0
Donation Broad	0	103	0	0	0
Endowed Focused	0	0	85	100	2
Endowed Broad	0	0	0	229	6
Unclassified	0	0	0	0	31

Appendix 3.3 Sample & Population Comparison

State	Public Charities		Private Foundations		Total	
	State Share of Sample	State Share of Population	State Share of Sample	State Share of Population	State Share of Sample	State Share of Population
Alabama	1.32%	1.09%	0.00%	1.15%	0.57%	1.13%
Alaska	0.00%	0.34%	0.25%	0.05%	0.14%	0.15%
Arizona	0.66%	1.63%	0.76%	1.84%	0.72%	1.77%
Arkansas	0.33%	0.22%	0.76%	0.23%	0.57%	0.23%
California	12.87%	12.45%	10.13%	10.28%	11.32%	11.03%
Colorado	1.65%	1.93%	0.76%	2.16%	1.15%	2.08%
Connecticut	2.31%	1.83%	1.01%	1.77%	1.58%	1.79%
Delaware	0.00%	0.04%	0.51%	0.97%	0.29%	0.66%
Dist. of Col.	2.31%	1.53%	0.76%	0.32%	1.43%	0.73%
Florida	1.98%	3.44%	2.03%	5.20%	2.01%	4.61%
Georgia	0.99%	1.63%	1.52%	1.43%	1.29%	1.50%
Hawaii	0.66%	0.80%	0.00%	0.56%	0.29%	0.64%
Idaho	0.33%	0.54%	0.00%	0.40%	0.14%	0.45%
Illinois	5.28%	4.20%	12.91%	5.23%	9.60%	4.89%
Indiana	1.65%	1.61%	1.77%	1.34%	1.72%	1.43%
Iowa	1.65%	1.55%	0.25%	1.33%	0.86%	1.41%
Kansas	0.99%	1.36%	0.51%	0.71%	0.72%	0.94%
Kentucky	1.32%	1.86%	0.00%	0.79%	0.57%	1.16%
Louisiana	0.99%	1.36%	0.00%	0.46%	0.43%	0.77%
Maine	0.33%	0.38%	0.51%	0.33%	0.43%	0.35%
Maryland	2.64%	1.71%	1.01%	2.59%	1.72%	2.30%
Massachusetts	3.63%	3.82%	0.76%	3.84%	2.01%	3.84%
Michigan	3.63%	3.33%	11.39%	2.52%	8.02%	2.80%
Minnesota	3.30%	3.60%	1.77%	1.82%	2.44%	2.43%
Mississippi	0.00%	0.25%	0.25%	0.26%	0.14%	0.26%
Missouri	1.65%	2.13%	1.01%	2.10%	1.29%	2.12%
Montana	0.33%	0.73%	0.00%	0.36%	0.14%	0.49%
Nebraska	0.66%	0.73%	0.76%	1.23%	0.72%	1.06%
Nevada	0.66%	0.80%	0.76%	0.45%	0.72%	0.57%
New Hampshire	0.66%	0.41%	0.00%	0.42%	0.29%	0.41%
New Jersey	1.98%	2.12%	3.29%	4.18%	2.72%	3.49%
New Mexico	0.33%	0.19%	0.00%	0.17%	0.14%	0.18%
New York	8.25%	7.21%	11.90%	11.89%	10.32%	10.32%
North Carolina	3.63%	2.44%	8.61%	2.47%	6.45%	2.46%
North Dakota	0.66%	0.87%	0.00%	0.05%	0.29%	0.33%
Ohio	7.92%	4.19%	0.76%	4.20%	3.87%	4.20%
Oklahoma	1.65%	1.19%	0.76%	1.27%	1.15%	1.24%
Oregon	1.32%	2.15%	0.76%	0.82%	1.00%	1.27%
Pennsylvania	3.96%	5.14%	3.54%	5.97%	3.72%	5.70%
Rhode Island	0.33%	0.32%	0.76%	1.51%	0.57%	1.11%
South Carolina	1.32%	1.06%	0.00%	0.87%	0.57%	0.94%
South Dakota	0.33%	0.59%	0.00%	0.06%	0.14%	0.24%
Tennessee	1.32%	1.90%	0.00%	1.14%	0.57%	1.40%
Texas	6.93%	5.68%	5.06%	4.57%	5.87%	4.95%
Utah	0.00%	0.33%	0.00%	1.18%	0.00%	0.89%
Vermont	0.00%	0.12%	0.00%	0.24%	0.00%	0.20%
Virginia	3.63%	3.20%	9.87%	1.60%	7.16%	2.15%
Washington	0.99%	1.01%	1.52%	1.85%	1.29%	1.57%
West Virginia	0.00%	0.31%	0.00%	0.35%	0.00%	0.34%
Wisconsin	0.66%	1.95%	1.01%	3.31%	0.86%	2.86%
Wyoming	0.00%	0.34%	0.00%	0.15%	0.00%	0.22%
Total	303	40,690	395	79,498	698	120,188

Population Data from NCC SOI 2010 990 and 990-PF reporting positive amounts of grantmaking

Appendix 3.4 Multinomial Logit Result by Alternate Classifications

Variables	(1) Ranked	(2) Potentially Eligible	(3) Not Eligible	(4) Gold	(5) Silver	(6) Bronze	(7) Participant	(8) Does Not Participate
Guidestar Impact Statement Provided	0.182*** (0.0507)	0.0544 (0.0390)	-0.237** (0.106)	0.564 (31.36)	1.276 (149.4)	0.401 (42.34)	0.233 (23.67)	-2.475 (212.7)
Application: Application Form Required	0.189*** (0.0654)	0.111* (0.0639)	-0.300*** (0.0738)	0.0403 (0.0409)	0.185*** (0.0622)	-0.0113 (0.0287)	0.0378 (0.0346)	-0.251*** (0.0524)
Geographic Focus: Single State	-0.0615 (0.0750)	0.229** (0.0943)	-0.167* (0.0911)	-0.0657 (0.0404)	0.164** (0.0654)	0.000194 (0.0334)	0.0129 (0.0304)	-0.111* (0.0575)
Membership: Regional	-0.129** (0.0640)	-0.0724 (0.0505)	0.201** (0.0964)	-0.0649** (0.0255)	-0.102 (0.0677)	0.0387 (0.0569)	-0.0287 (0.0284)	0.157** (0.0676)
Membership: Affinity Groups	0.145* (0.0742)	0.00757 (0.0530)	-0.152* (0.0897)	0.0260 (0.0402)	0.0534 (0.0745)	0.0796 (0.0574)	-0.0102 (0.0303)	-0.149** (0.0644)
Subject of Interest: Arts & Culture	0.00380 (0.0705)	-0.00557 (0.0615)	0.00224 (0.0845)	0.0111 (0.0416)	-0.0156 (0.0705)	0.0380 (0.0392)	-0.00427 (0.0288)	-0.0293 (0.0569)
Subject of Interest: Health/Science Research	0.0669 (0.0554)	0.0150 (0.0458)	-0.0817 (0.130)	-0.0115 (0.0308)	-0.0270 (0.0611)	-0.0138 (0.0345)	0.0267 (0.0290)	0.0257 (0.0557)
Subject of Interest: Environment	0.0473 (0.0576)	0.0590 (0.0489)	-0.107 (0.0950)	0.0196 (0.0326)	0.0666 (0.0597)	0.00886 (0.0315)	-0.0267 (0.0298)	-0.0684 (0.0520)
Subject of Interest: Health Care	0.0313 (0.0711)	0.0722 (0.0681)	-0.104 (0.115)	0.00739 (0.0399)	0.122* (0.0675)	0.0123 (0.0373)	-0.0548** (0.0279)	-0.0866 (0.0555)
Salary Share of Expenditures	0.0110 (0.0645)	0.0177 (0.0455)	-0.0289 (0.0578)	0.0392 (0.187)	0.183 (0.254)	-0.380 (0.353)	-0.0535 (0.181)	0.211 (0.204)
Total Revenue	-0 (6.13e-11)	5.72e-11** (0)	-0 (6.78e-11)	-0 (1.24e-10)	3.22e-10 (2.18e-10)	0 (6.78e-11)	-5.16e-10 (3.92e-10)	1.90e-10 (1.82e-10)
IRS Ruling Year	-0.00349*** (0.00123)	0.000587 (0.00106)	0.00290 (0.00198)	4.13e-05 (0.000734)	-0.00208 (0.00136)	0.000594 (0.000730)	0.00164* (0.000961)	-0.000203 (0.00120)
Observations	243	243	243	243	243	243	243	243
Category	Charity Navigator	Charity Navigator	Charity Navigator	Guidestar	Guidestar	Guidestar	Guidestar	Guidestar

MNL Marginal Effects reported; Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Charity Navigator:

- No statistically significant differences in subject area
- Application form required increases probability of being ranked & potentially eligible but decreases probability of being not eligible
- Regional memberships are associated with decreased probability of being ranked and increased probability of being ineligible while affinity group memberships have the opposite relationship

Guidestar:

- Health focus is positively associated with the probability of having silver status
- Impact statement provided has no statistically significant effect
- Application form required and single-state geographical focus increases the probability of having silver status and decreases the probability of not participating
- Regional membership increases the probability of not participating, while affinity membership decreases the probability of not participating
- Significant results are mostly for not participating as opposed to different levels

Appendix 3.5 OLS Regression Results of Annual Data by Alternate Classifications

Variable	LN Total Giving			LN TG to UNIs			LN TG for Research		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
IRS Status (Referent Group: Public Charity)									
Private Foundation	-0.254 (0.261)			-0.647 (0.597)			0.449 (1.814)		
Supporting Organization	-0.0982* (0.0543)			-0.721** (0.329)			-0.154 (0.469)		
Group Organization	0.282** (0.115)			0.639 (0.797)			1.941 (1.216)		
Guidestar Level (Referent Group: Not a Participant)									
Gold		0.300*** (0.0874)			0.871** (0.400)			-0.161 (0.647)	
Participant		0.0836 (0.0904)			0.905* (0.508)			0.152 (0.744)	
Silver		0.133** (0.0581)			0.463** (0.218)			0.0688 (0.370)	
Bronze		0.219* (0.117)			0.508 (0.315)			0.166 (0.922)	
Charity Navigator (Referent: Not Eligible)									
Ranked			-0.165*** (0.0566)			-0.265 (0.252)			-0.555 (0.417)
Potentially Eligible			0.0382 (0.0708)			0.136 (0.278)			0.0607 (0.465)
No Record			-0.174 (0.270)			-0.168 (0.783)			2.274 (2.843)
Lagged Proportion Grantmaker-Recipient State Match	0.0262 (0.0983)	0.00814 (0.0970)	0.0377 (0.0988)	-0.367 (0.382)	-0.392 (0.387)	-0.310 (0.395)	-0.104 (0.489)	-0.292 (0.483)	-0.117 (0.482)
Lagged Lobbying Activities	0.176 (0.113)	0.172 (0.112)	0.194* (0.113)	0.513 (0.357)	0.501 (0.352)	0.539 (0.352)	1.111** (0.516)	1.208** (0.538)	1.194** (0.536)
Lagged Proportion of Expenditures to Salaries	-1.663*** (0.434)	-1.602*** (0.439)	-1.729*** (0.464)	-1.416 (1.348)	-0.865 (1.347)	-0.970 (1.310)	0.294 (1.981)	0.566 (1.929)	0.590 (1.956)
Lagged Proportion of Expenditures to Fundraising	-0.0858 (0.666)	-0.0476 (0.652)	0.154 (0.677)	-3.928* (2.223)	-3.707* (2.021)	-2.818 (1.996)	-5.882* (3.216)	-4.361 (3.133)	-4.945 (3.172)
Lagged Outcome	0.825*** (0.0276)	0.822*** (0.0279)	0.816*** (0.0301)	0.761*** (0.0340)	0.768*** (0.0330)	0.770*** (0.0325)	0.677*** (0.0280)	0.683*** (0.0268)	0.678*** (0.0269)
Constant	6.400** (2.785)	6.382** (2.752)	6.036** (2.791)	14.16* (8.535)	14.80* (8.665)	12.76 (9.843)	18.00 (17.88)	18.43 (18.12)	14.91 (18.68)

Nonprofit Age & Size (Lagged Assets) Controls
Observations

X
1,005

X
1,005

X
1,005

X
1,005

X
1,005

X
1,005

X
1,005

X
1,005

X
1,005

OLS Coefficients, clustered on EIN; Level of observation: Year; Sample: 2007-2011
Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

IRS:

- Group entities, as compared to public charities, are associated with increases in total giving
- Supporting organizations, as compared to public charities, are associated with decreases in giving to universities
- There is no statistically significant difference between private foundations and public charities, nor is there statistically significant differences of type on research funding

Charity Navigator:

- Ranked as compared to not eligible is associated with increases in total giving
- No statistically significant difference on giving to universities or research

Guidestar:

- Gold, silver, and bronze status are all positively associated with higher giving overall as compared to not participating
- No statistically significant difference on giving to research

Appendix 3.6 OLS Regression Results of Grant Data by Alternate Classifications

Variables	All Areas			Supporting Research			Health		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
IRS Status (Referent Group: Public Charity)									
Private Foundation	0.427*** (0.142)			0.300 (0.218)			0.333 (0.309)		
Private Operating Foundation	-0.336** (0.144)			0.138 (0.199)			0.135 (0.102)		
Supporting Organization	0.421*** (0.124)			0.899*** (0.219)			0.492** (0.199)		
Group Organization	0.370** (0.166)			0.863*** (0.230)			-0.00422 (0.271)		
Guidestar (Referent: Not a Participant)									
Gold		0.256** (0.0992)			0.456* (0.274)			0.174 (0.118)	
Participant		0.0261 (0.0998)			0.0933 (0.195)			-0.0605 (0.180)	
Silver		-0.0174 (0.0527)			-0.00674 (0.153)			-0.190** (0.0934)	
Bronze		-0.255** (0.124)			-0.00202 (0.199)			-0.317 (0.222)	
Charity Navigator (Referent: Not Eligible)									
Potentially Eligible			-0.167** (0.0784)			-0.275 (0.191)			-0.140 (0.128)
Ranked			0.0496 (0.0577)			0.178 (0.207)			0.0927 (0.113)
No Record			0.281** (0.129)			0.585** (0.254)			-0.290** (0.143)
Grantmaker-Recipient State Match	0.116*** (0.0361)	0.124*** (0.0347)	0.101*** (0.0340)	0.0533 (0.105)	-0.0159 (0.137)	-0.0140 (0.116)	0.289*** (0.0777)	0.297*** (0.0718)	0.252*** (0.0842)
Lagged Lobbying Activities	0.118* (0.0645)	0.110* (0.0591)	0.111* (0.0661)	0.194** (0.0874)	0.177 (0.114)	0.155 (0.100)	0.470*** (0.101)	0.435*** (0.0910)	0.426*** (0.0987)
Lagged Proportion of Expenditures to Salaries	0.978 (0.753)	0.951 (0.610)	0.837 (0.666)	3.250*** (0.847)	1.621* (0.946)	1.877** (0.791)	1.600 (1.033)	1.717* (0.925)	1.581* (0.950)
Lagged Proportion of Expenditures to Fundraising	0.0296 (1.316)	0.123 (0.888)	0.104 (0.982)	-0.0846 (1.403)	-0.221 (1.162)	0.323 (1.189)	1.811 (1.451)	1.449 (1.028)	1.429 (1.035)
Lagged Total Giving to for Research (LN)	0.00262 (0.00282)	0.00541* (0.00293)	0.00301 (0.00301)						
Lagged Average Grant Size (LN)	0.406*** (0.0499)	0.427*** (0.0484)	0.444*** (0.0472)	0.516*** (0.0809)	0.646*** (0.0854)	0.686*** (0.0980)	0.448*** (0.0602)	0.445*** (0.0597)	0.454*** (0.0565)
Lagged Total Giving for Outcome (LN)	-0.0263 (0.0286)	-0.0307 (0.0241)	-0.0625** (0.0272)	0.0138*** (0.00395)	0.00993 (0.00628)	0.0106* (0.00603)	-0.0140** (0.00626)	-0.00986* (0.00517)	-0.0154*** (0.00575)
Constant	5.358** (2.563)	3.765 (2.494)	2.891 (2.491)	1.683 (5.008)	-2.474 (6.013)	-0.502 (7.406)	1.127 (5.536)	1.221 (5.675)	-1.479 (5.520)
Nonprofit Age & Size (Lagged Assets) Controls	X	X	X	X	X	X	X	X	X
Observations	351,708	351,708	351,708	10,634	10,634	10,634	19,939	19,939	19,939

OLS Coefficients, clustered on EIN; Level of observation: Grant; Sample: 2007-2011; LN Grant Size

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

*Equations (1-3) includes controls for lagged proportion of total giving to universities, schools, & hospitals

IRS:

- Increased grant size is associated with private foundations, supporting organizations, and group entities as compared to public charities for overall giving
- Support and group entities are associated with increased grant size compared to public charities for research grant size

Charity Navigator:

- No statistically significant differences between being ranked as compared to not eligible

Guidestar:

- Gold status, as compared to not participating, is associated with increased grant size for overall funding and research funding
- Bronze status, as compared to not participating, is associated with decreased grant size for overall funding and Silver status is associated with decreased size for health funding

Appendix 4.1 Geographic Market Share and Size Distribution

Geographic Market Share					
State	2011	2010	2009	2008	% Change from 2008 to 2011
Low Concentration (Competitive)					
Ohio	0.35	0.22	0.21	0.13	170%
Georgia	0.20	0.17	0.29	0.32	-39%
Rhode Island	0.49	0.46	0.41	0.36	35%
Indiana	0.44	0.35	0.41	0.33	33%
Utah	0.45	0.57	0.54	0.36	26%
North Carolina	0.45	0.49	0.44	0.37	22%
Colorado	0.28	0.24	0.23	0.23	21%
Florida	0.28	0.27	0.21	0.23	21%
Minnesota	0.45	0.37	0.37	0.37	20%
Oregon	0.35	0.35	0.30	0.29	20%
Kentucky	0.24	0.49	0.26	0.29	-18%
New York	0.30	0.32	0.41	0.36	-17%
Delaware	0.46	0.48	0.51	0.54	-15%
Virginia	0.26	0.25	0.24	0.24	11%
Kansas	0.42	0.43	0.41	0.38	10%
Illinois	0.27	0.24	0.26	0.24	9%
Pennsylvania	0.21	0.22	0.23	0.24	-9%
Wisconsin	0.25	0.46	0.31	0.27	-7%
New Jersey	0.27	0.23	0.29	0.26	4%
California	0.36	0.37	0.41	0.35	2%
Idaho	0.48	0.48	0.46	0.48	1%
Connecticut	0.35	0.35	0.33	0.35	1%
District of Columbia	0.43	0.45	0.43	0.44	-1%
Moderate Concentration					
Texas	0.58	0.56	0.52	0.31	88%
Massachusetts	0.70	0.46	0.45	0.43	63%
Alabama	0.55	0.60	0.36	0.35	57%
Tennessee	0.52	0.46	0.37	0.35	46%
Louisiana	0.59	0.44	0.41	0.41	44%
Michigan	0.54	0.48	0.39	0.38	40%
Nebraska	0.63	0.46	0.43	0.48	32%
Maryland	0.52	0.44	0.73	0.76	-31%
Mississippi	0.67	0.74	0.76	0.80	-17%
Iowa	0.52	0.43	0.40	0.45	16%
Montana	0.74	0.77	0.78	0.87	-15%
Missouri	0.66	0.65	0.67	0.76	-13%
Wyoming	0.73	0.68	0.76	0.82	-11%
Vermont	0.67	0.68	0.65	0.61	10%
South Carolina	0.50	0.50	0.46	0.46	10%
Arizona	0.70	0.70	0.66	0.66	6%
Nevada	0.59	0.62	0.57	0.62	-5%
Hawaii	0.61	0.67	0.64	0.63	-4%
New Hampshire	0.60	0.60	0.63	0.63	-4%
New Mexico	0.74	0.77	0.76	0.72	4%
West Virginia	0.60	0.73	0.78	0.58	3%
Washington	0.69	0.67	0.67	0.67	2%
Alaska	0.61	0.56	0.62	0.60	2%
Oklahoma	0.72	0.74	0.77	0.72	1%
High Concentration (Oligopolistic)					
South Dakota	0.80	0.75	0.81	0.73	10%
Maine	0.91	0.92	0.90	0.89	2%
Arkansas	0.95	0.94	0.94	0.94	1%
North Dakota	0.88	0.89	0.88	0.89	-1%

Based on total revenue values of zero or more

Geographic Market Size					
State	2011	2010	2009	2008	% Change from 2008 to 2011
Over 1,000 Organizations					
California	1,347	1,369	1,372	1,372	-2%
New York	1,019	1,039	1,013	1,000	2%
100 - 1,000 Organizations					
Florida	661	658	621	568	16%
New Jersey	428	416	409	368	16%
Tennessee	188	179	171	166	13%
South Carolina	133	141	134	119	12%
Georgia	267	273	271	239	12%
Ohio	400	432	431	430	-7%
District of Columbia	152	153	162	161	-6%
Minnesota	204	206	194	192	6%
Missouri	201	212	216	213	-6%
Virginia	332	336	337	315	5%
Alabama	135	139	139	140	-4%
Colorado	228	235	238	219	4%
Texas	611	615	603	587	4%
North Carolina	258	260	252	248	4%
Kentucky	107	116	109	103	4%
Connecticut	179	190	184	174	3%
Arizona	186	192	193	181	3%
Michigan	273	300	295	278	-2%
Pennsylvania	509	503	515	498	2%
Wisconsin	207	207	207	203	2%
Washington	228	229	229	224	2%
Indiana	177	192	189	178	-1%
Maryland	342	370	372	346	-1%
Louisiana	142	145	145	140	1%
Massachusetts	419	426	401	417	0%
Illinois	574	599	585	572	0%
Oregon	148	149	150	148	0%
Kansas	109	107	111	109	0%
Less than 100 Organizations					
Rhode Island	46	51	53	58	-21%
North Dakota	18	19	19	15	20%
Hawaii	43	46	48	50	-14%
Vermont	37	35	32	33	12%
New Mexico	86	87	79	77	12%
New Hampshire	45	46	47	41	10%
Wyoming	18	21	22	20	-10%
Alaska	35	36	36	38	-8%
Montana	28	30	29	30	-7%
Delaware	39	40	38	41	-5%
Idaho	39	48	39	37	5%
Utah	84	87	86	80	5%
South Dakota	21	23	22	20	5%
Arkansas	48	58	54	50	-4%
Mississippi	83	88	86	80	4%
Nevada	58	60	54	56	4%
West Virginia	39	39	38	40	-3%
Iowa	62	69	64	61	2%
Maine	50	48	52	51	-2%
Oklahoma	85	84	88	87	-2%
Nebraska	80	86	82	79	1%

Size based on count of organizations with more than zero in revenue

Data Source: Alexandra Graddy-Reed calculations using data from Internal Revenue Service, Exempt Organizations Business Master File (501(c)(3) Organizations, 2008–2011); Urban Institute, National Center for Charitable Statistics, <http://nccsdataweb.urban.org>

Appendix 4.2 State Distribution Comparison

State	Sample		Population	
	G & H Orgs	Percent	G & H Orgs	Percent
California	95	11.16%	1,394	11.80%
New York	111	13.04%	1,057	8.95%
Texas	73	8.58%	668	5.66%
Florida	34	4.00%	652	5.52%
Illinois	59	6.93%	602	5.10%
Pennsylvania	59	6.93%	534	4.52%
Ohio	9	1.06%	447	3.78%
New Jersey	24	2.82%	431	3.65%
Massachusetts	47	5.52%	404	3.42%
Maryland	45	5.29%	381	3.23%
Virginia	36	4.23%	335	2.84%
Michigan	21	2.47%	297	2.51%
Georgia	25	2.94%	274	2.32%
North Carolina	5	0.59%	269	2.28%
Colorado	6	0.71%	252	2.13%
Washington	21	2.47%	235	1.99%
Missouri	14	1.65%	226	1.91%
Minnesota	6	0.71%	225	1.91%
Wisconsin	13	1.53%	218	1.85%
Indiana	15	1.76%	204	1.73%
Arizona	9	1.06%	203	1.72%
Tennessee	4	0.47%	192	1.63%
Connecticut	9	1.06%	182	1.54%
Oregon	4	0.47%	164	1.39%
District of Columbia	20	2.35%	162	1.37%
South Carolina	6	0.71%	152	1.29%
Alabama	7	0.82%	144	1.22%
Louisiana	11	1.29%	143	1.21%
Kentucky	2	0.24%	121	1.02%
Kansas	8	0.94%	112	0.95%
New Mexico	6	0.71%	89	0.75%
Utah	3	0.35%	88	0.75%
Mississippi	1	0.12%	86	0.73%
Oklahoma	10	1.18%	86	0.73%
Nebraska	3	0.35%	83	0.70%
Iowa	-	0.00%	74	0.63%
Nevada	8	0.94%	64	0.54%
Arkansas	-	0.00%	53	0.45%
New Hampshire	2	0.24%	52	0.44%
Idaho	-	0.00%	50	0.42%
Hawaii	1	0.12%	49	0.41%
Maine	5	0.59%	49	0.41%
Delaware	1	0.12%	44	0.37%
Rhode Island	-	0.00%	44	0.37%
Vermont	2	0.24%	40	0.34%
Alaska	-	0.00%	39	0.33%
West Virginia	-	0.00%	34	0.29%
Montana	2	0.24%	33	0.28%
South Dakota	-	0.00%	29	0.25%
Wyoming	4	0.47%	24	0.20%
North Dakota	5	0.59%	21	0.18%
Total	851		11,811	

Note: Population data based on registered public charities filing form 990, as of November 2010

Data Source: Internal Revenue Service, Exempt Organizations Business Master File (501(c)(3) Organizations, 2008–2011); Urban Institute, National Center for Charitable Statistics, <http://nccsdataweb.urban.org>

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